

"H.M.S. Pinafore" Cast Filling Up-Six Roles Still Open

by Philip Massey

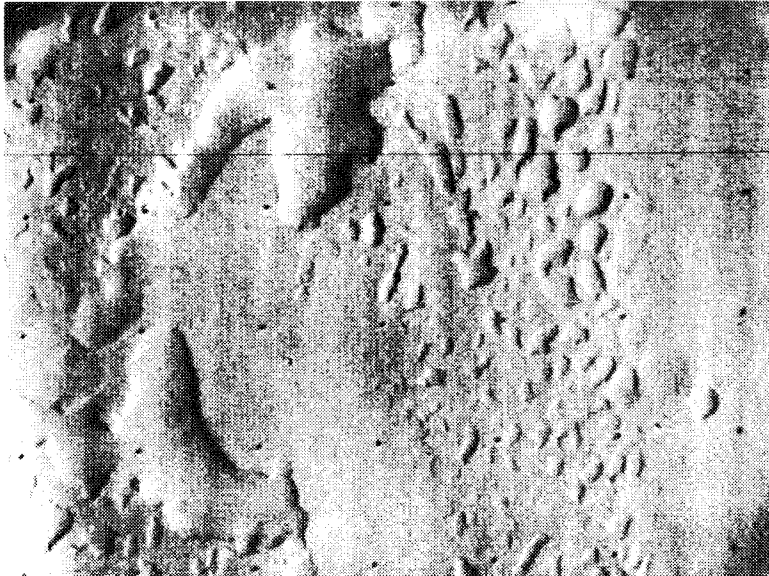
Auditions were held last week-end for ASCIT Musical's production of Gilbert and Sullivan's (that's William and Arthur's) *H.M.S. Pinafore*. Acting under the assumption that some people didn't know what the play was about, and the off-chance that anyone cared to know, the *Tech* questioned conductor Tim Erickson, director Bruce McLaughlin, and producer Greg Simay. After a few evasive answers someone found a script and a synopsis was quickly compiled.

The action takes place during a day in 1815 aboard, appropriately, the *H.M.S. Pinafore*. Captain Corcoran's eighteen year old daughter Josephine is to be married to his superior officer, the sixty-eight year old Sir Joseph Porter, K.C.B. However, Josephine is in love with Ralph (pronounced Rath) Rackstraw, a lowly seaman. The plot's first thickening occurs when Buttercup, a Portsmouth bumboat woman (it's nothing dirty) who sells lollipops to short sailors, comes on board and the audience hopefully discovers that she has a secret.

What's My Line?

Ralph (or Rath) is about to kill himself until Josephine steps in and announces that she loves him. The audience's disappointment is mildly appeased by the entrance of Sir Joe, who has come to take Josephine away. However, finding her indifferent if not hostile towards him, he explains that she shouldn't feel bad about being so much beneath him. He manages to do it in such way, however (i.e., singing) that Josephine doesn't understand any of it and decides he has nothing against her marrying Rath. A clever twist of

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JPL scientists speculate that these Martain hollows were formed by thawing of a large accululation of ground ice, or possibly by wind action on loose material.

SSS Changes

Draft Revisions Proposed

The Selective Service System recently released a list of proposed changes in their regulations which will affect young men facing the draft process in the future. The changes—which were first proposed to the public for review in early November and now are amended after further study—concern procedures for personal appearances and appeals, among other major subjects. The proposed changes are expected to become effective throughout the more than 4,000 local draft boards in mid-February. Until they become effective, Selective Service will continue its moratorium policy on all personal appearances and appeal board actions.

One of the major changes proposed today guarantees the registrant's right to request an appeal following an adverse decision at his personal appearance with his local board. Another proposed change allows a registrant who receives a long postponement of induction to receive consideration from his local board for deferment and exemption requests, including a claim

for conscientious objector status. The revisions set a 15-day time limit in which a registrant must request a personal appearance or an appeal, but they permit the local board to grant an extension of this period when a registrant demonstrates that his failure to respond within the 15-day limit

Continued on Page Four

Your 2¢ Worth

ASCIT Budget Figures Released

Below are the results of how the members of ASCIT decided to allocate this term's budget. The percentage figure indicates the fraction of the total budget given over to each activity. Of the 685 ASCIT members surveyed, 14 (3%) expressed no preference.

Major Expenditures:
Social events (19.97%) \$698.95
ASCIT Movies (27.4%) \$959.00
Athletic awards (6.4%) \$224.00
Athletic banquets (3.49%)
..... \$122.15
Clubs (26.97%) \$943.95
Others (15.74%) \$550.90

Graduate Students Face Prospect of Tuition

by Phil Neches

Approximately forty graduate students will have to pay tuition next year, or the equivalent in revenue made up somehow, Dr. Harold Brown told an audience of approximately two hundred graduate students Monday night. Between 1968 and next year, Caltech has lost about 200 Federal fellowships, the the Institute cannot make up all of the loss, he said.

The cut in federal funds, in addition to a slight decrease in support for graduate education from industrial sources, will mean a loss of about \$320,000 next year, and over half a million the year after. Dr. Brown indicated that next year, about 6% of the graduate student body will have to pay tuition.

Divisions' Choice

Dr. Pings, Vice Provost for graduate affairs, indicated that the consensus of faculty opinion seems to be not to cut the number of graduate students

below 700. He said that he would recommend that the decision as to how to distribute the burden ("where the axe will fall" in the words of one graduate student) be made by the divisions, taking into account special individual circumstances.

According to Dr. Pings, Harvard, MIT, Stanford, and Yale will follow similar plans next year. The Institute, however, has for the time being rejected any plan similar to Yale's "Pay as You Earn" Plan, which would, through a system of loans repaid according to the graduate's income, leave students indebted to the Institute for many years after obtaining their degrees.

Sharp Attack

The administration came under sharp questioning after the presentations when the meeting opened to questions from the floor. Many grad students expressed concern that tuition would fall on fifth (and beyond) year students, which they claimed would be both a change in the ground rules and an added pressure on students just finishing their work.

Some also questioned the recent increase in building activity by the Institute when they propose to levy tuition for graduate students. Dr. Brown explained that people on the outside still seem willing to give Caltech money for buildings, but not for graduate scholarships, and that the Institute is obligated to spend the money only for the purpose it is given.

Further Tuition

Dr. Brown said that he hoped that the federal government would restore support of graduate education, but that they probably would not. He said that under the current Administration in Washington, graduate fellowships have been cut drastically and that all indications pointed to further cuts.

Dr. Pings added a hopeful note by reporting that the State

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Environmentally Safer

Five Years to a Fusion Reactor?

by Etaoin Schroedlu

Energy from nuclear fusion reactions will be harnessed to meet the world's power needs, says Dr. John Holdren, Caltech Senior Research Fellow, speaking on "Environmental Aspects of Fusion Power." Furthermore, says Dr. Holdren, the fusion system should be much safer environmentally than the current fission systems, and will probably cost no more to operate.

Much of the world's current commercial power comes from fossil fuels. However, the earth's deposits of these fuels cannot hope to meet the future, increased power demands without being depleted to the point of becoming uneconomical as a primary source of power. Dr. Holdren cited nuclear fission,

nuclear fusion and direct use of solar energy as the only sources of power viable in the "super-long" term. At the present time, the United States is putting most of its power development budget into the fission systems, with relatively little for fusion systems research. Direct use of solar energy has not yet gained much notice or produced much progress.

A primary reason for the fusion program's support being less than that of the fission program is that the state of the art in fusion power is behind that of fission. In fact, no viable fusion reactors have been built yet, and nobody is exactly sure how they should be built. Dr. Holdren estimated that the next five to ten years should see the

design of a successful system producing power from fusion, but even then it would probably take fifteen years before the system could be made fully operational in the real world, and another fifteen years before the system could assume the major burden of the world's power supply. There are major problems to be overcome in deciding which nuclear reactions to use, assuring the supply of the necessary ingredients, and, in particular, providing environmental safety for all parts of the process.

Nevertheless, Dr. Holdren felt that there were good reasons for pursuing thorough investigations of the potentials of the fusion system as an alternative to

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No preference (0.03%) .. \$1.05
Total \$3500.00
The \$1494.85 given to clubs and "other activities" broke down as follows:
Others, general (17.91%) \$255.19
Clubs, general (33.94%) \$507.37
ASME (0.40%) \$6.02
Band (1.01%) \$15.10
Bridge Club (0.89%) .. \$13.26
BSU (1.32%) \$19.76
CACP (1.29%) \$19.34
Chinese Student Assn. (0.70%)
..... \$10.49
Community Relation Fund
(0.158%) \$2.36
Coffee House (3.13%) .. \$46.78
Cycling Club (0.28%) .. \$4.18
CCF (2.89%) \$43.16
Deseret Club (1.48%) .. \$22.17
Debate Club (1.21%) .. \$18.09
Darkroom (1.34%) ... \$20.03
ESC (1.31%) \$19.55
Continued on Page Three

YMCA Notes

Bangla Desh Talk Today

by Claude Anderson

MAMMOTH—The Y is planning a ski trip to Mammoth on February 12. If you are interested, go by and let them know.

HARRIS—David Harris, Joan Baez's famous husband, will be on campus all day February 15. A meeting for students interested in hosting his visit and planning activities around it will be held in the Y lounge at 4:00 p.m. next Thursday.

CAMPING—The Y camping equipment has arrived. There are sleeping bags, back packs, cook

kits, and tube tents which may be rented for a nominal fee.

BANGLA DESH—Don't forget the Bangla Desh seminar in Winnett Lounge today at 4:00 p.m. Drs. Huttenback, Islam, and Dhawan will discuss the future of Bangla Desh. The informal talk will be hosted by Belal Baaquie.

AUFS—The topic of Dr. Thomas Saunders' talk tomorrow at noon in the Y lounge is "Pot, Fornication, Religion, nd Politics." Dr. Saunders, an American Universities Field Staff representative, is well versed in these subjects.

Throop Beat

Caltech On Television

by millikan troll

The Millikan Parapsychology Building made its television debut in "The Sixth Sense" over the weekend. Well, it's nice to know that Caltech is looking into spooks, poltergeists, dopplegangers, and things that go bump in the night (the PDP-10?). However, graduate students will be glad to know that Caltech gets paid \$500 per day when the minions of Hollywood turn it into "Vandaam Research Center" and other portions of fairyland.

Reliable rumor has it that Gates will be demolished, time as yet undecided. Demolition of Culbertson will supposedly commence around the 26th. And ground (street?) breaking for Behavioral Biology is coming up soon. Also, a plan for landscaping around the remains of Throop has been settled on. Today's Construction Report has been brought to you by McGraw-Hill...

Endorsers

We received a list of some 400 student body presidents and newspaper editors endorsing George McGovern for President the other day. We can report

that our esteemed student body president, Mr. Watkins, is on the list (are you taking notes, J. Edgar?), along with a few other interesting characters. For example, we found the name of Cathy Meyer, editor of the "Daily Trojan" at UCLA (!) and a certain Steve Abthus, student body president of (you guessed it) Caltech.

The great quote of the week may be found in the most recent Computing Center Bulletin: "The bookstore has new manuals available for the PDP-10. For a change, they describe the software that is actually running and not what we had six months ago."

Top of the Week

We are told that the Dean's Office end of Throop has been decimated this week. Drs. Bonner and Huttenback are out, at least one with the flu... Reports of trouble simmering involving students being in the old houses kitchen after hours have reached us... The winner of the ASCIT budget competition appears to be the Off-Campus club, which got 26 cents.

Finally, Add Day is tomorrow.

Watkins Reports

We Have A Right

Young people have a right and a responsibility to participate in all public and private decision-making processes which affect their lives.

This unequivocal conclusion was set forth in a Position Statement just released by the National Assembly for Social Policy and Development, an association of organizations and individuals created to develop and promote policies and programs essential to the social health and unity of the nation.

The inclusion of young people in the establishment of relevant educational standards and curricula, and in establishing significant rules and regulations for other situations where they are primary participants, was a key point in the statement.

The paper noted that "the selection among alternative life styles is a decision the individual has the right to make," and strongly supported participation in decision-making by young people who are non-conformist.

The Position Statement called for leadership at the Federal level in articulating policy as it relates to new ideas of youth participation, the extension of the voting franchise to 18-year-olds, and provisions for every state legislature to establish 18 as the uniform national age of majority.

The National Assembly also urged the extension of the right to hold public office to all eligible voters, and participation of young people—not in secondary or ancillary roles—in

Continued on Page Five

THE ASCIT FRIDAY NIGHT MOVIE
THIS WEEK:

THE FORBIN PROJECT

Starring: Eric Braeden, Susan Clark,
Gordon Pinsent, William Schallert

+ PINK PANTHER CARTOONS

FRIDAY, JAN. 21, 7:30 and 9:30 p.m.

in Baxter Lecture Hall.

Admission: 50¢—ASCIT members and
their guests; \$1.00—anyone else

NEXT WEEK:

START THE REVOLUTION
WITHOUT ME

Letters

Hammond Clarifies Requirements

Sirs:

The article by Etaoin Schroedlu in the January 13 issue of *The California Tech* was interesting and gives a good account of the kind of change that has occurred here during the past five years. I may seem picayune but I believe that there are inaccuracies, both explicit and implied, in the description of present requirements for a degree in chemistry.

The following statements are extracted from their context, but do mean what they say literally.

"There are no formal chemistry course requirements in the chemistry option except for 2 units of Ch 90. Each student in consultation with his advisor, selects a suitable course of study under the supervision of the Division."

"The group of courses listed below would constitute a common core for many students in the option."

"The core program is not rigorously required for graduation, nor is it in any sense a complete program." (Partly quoted accurately in the article.)

"Several representative programs, including sets of possible electives, are shown below. These may well approximate choices by students who intend to do graduate work in conventional areas of chemistry." (All italics are mine.)

The only specifically required courses for a degree in chemistry are the Institutional requirements in math, physics, and chemistry plus Ch 90, a total of 143 units. The phrases quoted above are not "riders." They are statements of carefully considered educational philosophy of the Division. We believe that more diversity is sorely needed in American education and that students who have well formulated plans for unusual pro-

grams can be instrumental in our search for diversification. They will also probably serve their own professional interests well. However, we recognize that students vary a great deal in their tolerance for uncertainty; the same is true of the faculty. Students who want the security of being guided into sound, traditional programs have a right to that guidance and can find examples worked out in great detail. A student can organize his program according to a set formula or according to his own recipe; the choice is his.

I have the impression that many students regard the possible core program on p. 225 of the Bulletin as a statement of minimum requirements, despite the direct statements to the contrary. The fact that many advisors are skeptical of very unusual programs is also a deterrent. The upshot has been that programs submitted by students in the option are not very different from those that might be expected under a system of rigid requirements. If this represents the reasoned choice of our students, fine! However, I hope that they recognize that the choice is their own. The opportunity to elect unusual programs designed to lead to unusual professional activity is available. To demand that our students take such a course would make even less sense than to demand that they take a rigidly prescribed traditional program.

—George S. Hammond, Chairman
Division of Chemistry and
Chemical Engineering

Tech Editors:

We would like to point out an error which appeared in the January 13 edition of the Tech. In the article about Discobolus competition, the members of Page House were referred to as "Pageboys." Everyone in the

know will be quick to point out that the only correct term for people from Page is "Page Dudes." In the future we hope your staff will endeavor to be more accurate.

Mike Mariani
Page House Secretary

Greg Sharp
Page House Athletic Manager

Robert T. Monagan
Assembly Minority Leader
Room 2132—State Capitol
Sacramento, California

Dear Mr. Monagan,

I read your news release of January 3rd with a sense of interest and a growing sense of shock. After working so long and producing so little last year, if the most imaginative proposal for bettering the situation consists only of limiting the Legislature's working days, then the people of this state made a bad bargain indeed when they authorized open-ended sessions (with a vast increase in Legislators' pay).

I think the question is not one of quantity but one of quality. The 1971 Legislature could have made far better use of its record number of days than it did. While fighting for maximum political advantage in

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Budget

Continued from Page One

Glee Club (7.50%)	\$113.59
Hillel (0.80%)	\$11.94
Interhouse Sing (0.22%)	\$3.34
Hockey Club (2.20%)	\$32.10
Karate Club (1.04%)	\$19.55
Jam Room (2.00%)	\$29.90
Musical (3.41%)	\$51.03
Musicale (1.75%)	\$26.10
Mythopoeic Society (0.08%)	\$1.15
Newman Club (0.37%)	\$5.50
Off Campus (0.02%)	\$0.26
PME (1.62%)	\$24.27
Rugby Club (0.35%)	\$5.24
Radio Club (0.90%)	\$13.48
Scuba Club (1.06%)	\$15.77
Student Shop (1.36%)	\$20.34
Totem (0.23%)	\$3.46
YMCA China Day (0.65%)	\$9.70
World Vision Inc. (0.26%)	\$3.93
CEAC (4.82%)	\$72.00

Note: YMCA China Day already funded.

ASCIT might like to recompute the ESC and Karate Club results since the percentages differ while the amounts are the same.

News Briefs

New Musicale Equipment Arrives

The new Musicale equipment has arrived and will soon be installed. New keys may be obtained from Steve Moritsugu, 138 Page, for \$1.

Directory of Musicians—Amendment

The Musical Activities Committee new directory of Musicians does not include undergrad and grad students, post-docs, and faculty who were not here last year to fill out a questionnaire. Therefore, we propose to add a few pages to the present directory to include these people. If anyone wishes to be included, he should send Harold Gordon (156-29) or Frank Marble (205-45) the following information: Name, address (campus and home, including city), phone

numbers (campus and home), instrument(s) (guitar, trumpet, piano, etc.)/or voice range, ability (professional to just starting), music styles (jazz, modern, classical, pop, etc.), and availability (only weekends, etc.)

Caltech Qualifying Bridge Tourney to be Held Jan. 23

Qualifying rounds for the Intercollegiate bridge tournament will be sponsored by the Caltech Bridge Club starting Sunday, January 23, in Clubroom One. The Qualifying round starts at noon and will run to 5 p.m. It costs 50 cents to enter. If twelve tables enter, Caltech can send three pairs to the Regionals at San Jose.

Paying the Same... But Getting Less?

Have you noticed that the Tech is somewhat more readable lately? Due to technical improvements, the type is now 6% larger, hence 6% more readable (well, that's the theory)... Finally, don't forget Add Day, which happens to be tomorrow.

Disco. Points

Discobolus Point Totals	
Page	20
Blacker	1
Dabney	1
Ruddock	1
Fleming	6
Lloyd	5
Ricketts	5

More Letters

Continued from Page Two

the redistricting game, both parties neglected such items of general and urgent need as welfare and tax reform, pollution control, educational fundings, and the increasing backlog in the state's courts. Control of the Legislature will change more on the performance of the two parties in attacking these issues, not in their gerrymandering legerdemain.

I understand that the Legislature hopes to adjourn by the end of June this year, in order to free members for the summer of conventions and the ensuing Presidential campaign. I hope that the Legislature does not let a creditable and meritorious attention to the good of the country overshadow their more immediate obligations to their constituents. However, all indications seem to the contrary: if the Legislature meets half as many days, we can only expect it to do somewhat less than half as much. Half of last year's performance would sufficiently anger the people of California to put all of your precious seats in jeopardy.

If the Legislators do not feel compelled to serve the public well on their own, I do not think that added time pressure will increase their motivation.

Sincerely,
Philip M. Neches
Editor-in-Chief
The California Tech

Tuition

Continued from Page One

of California has re-activated its graduate fellowship program, which has been funded at \$1 million. However, the impact on Caltech will be small unless that program is greatly expanded.

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the gap

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Jottings

Pasadena Survival Kit

by Etaoin Schroedlu

Those of you who don't plan to flunk out of Caltech are presumably planning to spend at least four years living here at Caltech. This also means that you will be spending that time in Pasadena and its environs, so it might be a good idea if you take the trouble to find out about some of the interesting things going on here. Various entertainment activities are regularly covered in the *Tech* by our Entertainment staff, so here I want to cover a few other sorts of things going on in Pasadena.

Pasadena has quite a good collection of bookstores. **Vroman's**, 695 E. Colorado, is within walking distance of Caltech, and has a very large collection of paperbacks on the second floor, as well as hard-bound books and other miscellaneous items on the ground floor. There is in particular a very fine collection of more or less academic titles on the second floor.

Particularly good for light paperbacks, science fiction, mysteries and just novels, is **Bungalow News**, 746 E. Colorado, close to Vroman's. For used books, paperbacks and hardbound, there is **Broughton's**

at 20 N. Lake. And, of course, if you have wheels, there's the massive collection at **Pickwick's** 6743 Hollywood Blvd. in L.A.

Another service of the local libraries in Altadena and South Pasadena is to have used book-sales, at very reasonable rates; unfortunately, these won't take place until this May.

There are also all sorts of record/tape places to choose from. I've had best luck with **A & H Discount Records**, 1766 E. Colorado, also not far from Caltech, and occasionally with **Discount Record Center**, 463 E. Colorado.

Everyone has individual tastes in restaurants. I'll put in a plug for **Burger Continental** at 535 S. Lake, as being the best place within easy walking distance of Caltech. Another good but not-so-close place is the **Flaming Skewer**, 1280 N. Lake, which has very good shish-kebab type food. For large quantities of cheaper fare, **Perry Boys' Smorgy**, at 707 E. Colorado, has the all-you-can-eat arrangement, supper \$1.75, and they mean it: you can go back through the line as many times as you want. Another place which was a good buy last time I went there is **Connals'**

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Samuel Directs Philharmonic, Gutierrez Directs Piano

Special \$2 student tickets will be available for the Los Angeles Philharmonic debut of Cuban-born Los Angeles pianist Horacio Gutierrez at the Music Center Thursday, Friday, and Sunday, January 27, 27, and 30. Gutierrez will play the Brahms D Minor Piano Concerto with the orchestra under the direction of the Philharmonic's associate conductor, Gerhard Samuel.

As with all of their 1971-72 Winter Season programs, the Philharmonic will set aside at least 100 student tickets, specially priced at \$2, for all three of the Gutierrez-Samuel programs. These tickets will go on sale to those students with approved identification 90 minutes prior to performance time.

This policy will remain in effect whether or not full-priced tickets are still available. For further information, call 626-7211.

Samuel, making his first subscription appearances in the Pavilion this season, will also conduct Haydn's Symphony No. 103 (Drum-Roll) and the Los Angeles premiere of Japanese composer Toru Takemitsu's "Green" (November Steps No. 2). Performance times are Thursday and Friday at 8:30 p.m., and

Sunday afternoon at 3:00.

Gutierrez, the top American prize winner at Moscow's 1970 International Tchaikovsky Competition, made such a strong impression on the judges that he was the only contestant who was subsequently asked to give special recitals in Moscow and Leningrad. These concerts proved so successful that Gutierrez was invited to return to Russia in February, 1971, for an extended tour.

Born in Havana in 1948, Gutierrez began studying music when he was three, making his debut with the Havana Symphony eight years later. In 1962, Gutierrez and his family moved to Los Angeles. This year, in addition to his winter subscription season debut with the Philharmonic, Gutierrez will also play recitals in New York and Philadelphia, and appear as soloist with such renowned orchestras as the Boston Symphony, the Cleveland Orchestra, and the San Francisco Symphony.

Draft

Continued from Page One

is due to reasons beyond his control. The policy proposal that a local board give a registrant at least 15 days notice of a pending personal appearance with the board, the state appeal board, or the Presidential appeal board, also was retained.

The package of regulations was the second major group of changes released in recent weeks by Selective Service headquarters. The major portion of these changes was first proposed to the public in early November and then effected throughout the System in early December.

The changes put into effect on December 10 included the phasing out of all new undergraduate student deferments, an increase in the time given registrants who receive induction orders (from 10 to 30 days), the establishment of classification 1-H as a new administrative holding category, and a major revision of the procedures and guidelines of the alternate service program for 1-O conscientious objectors.

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LC, Gainesville, Fla.

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ASCIT Announcement: The BOD has around \$1300 left in the general fund. Next Monday at 9:30 p.m. in Clubroom Two, the BOD will take requests from clubs who NEED bread (in addition to their previous allotments). Please come only if you really need the money, as a contingency fund must be maintained.

The following proposal was presented by the Excomm and approved by the BOD:

RESOLUTION IV:
PUBLICATIONS
sec. 2. The date of issuance of

the *Big T* shall be no later than ten (10) days after the beginning of the first term of the following year. The responsibility of the Editor of that book shall terminate after the final deadline. The responsibility of the Business Manager of that book shall terminate after the distribution of that book. The Business Manager of that book shall be paid only after the fiscal records of that book are audited by an agency approved by the Board of Directors. A senior may not be appointed Business Manager, since the term of office is usually longer than one academic year.

Beckman Happenings

Pasadena Symphony Performs Sunday

by Jeff Mallory

The Pasadena Symphony Orchestra will give two performances in Beckman Auditorium this Sunday, January 23, at 3:00 and 8:00 p.m. Robert Walton Cole, the special guest director for these concerts, will lead PSO through four pieces: *Serenade No. 2 in A, Opus 16* by Brahms, *Ode* by Stravinsky, *Symphonie Concertante* by Haydn, and *Symphony No. 3* by Ives. Tickets are \$4.00 and \$2.50 general admission and \$1.00 for students.

Dr. Louis Breger closes out the Fall *Caltech Lecture Series* Monday, January 24, at 8:30 p.m. with a talk on "Implications

of Recent Research on Dreams." Dr. Breger, one of Tech's few psych. faculty, will cover his own research, as well as that of others, in dream theory and the role of dreaming in psychological adaptation.

The lecture, as always, will be in Beckman Auditorium, free, and everyone is invited.

Marie Marchowsky and her company will dance in, through, and around Ramo Auditorium tomorrow and Saturday nights at 8:30 p.m. The group will perform works choreographed to several composers' music, from Stravinsky to Harrison. Few tickets are left, so haste is advisable if attendance is desired.

Watkins

Continued from Page Two

the affairs of political parties.

The organization supported the reduction of age limits under various state laws, sufficient to permit young people to serve on public and private governing boards.

The National Assembly called for an examination and evaluation of all national organizations associated with it to determine areas of youth participation, urged that measures be taken to make such participation a reality, and concluded:

"Being committed to the values and beliefs embodied in this statement, The National Assembly supports, and will seek to implement by every means possible, these actions to assure the full participation of youth."

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Musical

Continued from Page One

plot brings the villain, Dick Deadeye, on the scene. Deadeye, who has heard everything, explains the situation to the Captain as simply as he can, who then confronts the eloping lovers and begins to throw Rath in the brig.

Cross Porpoises

Sir Joe, who has overheard the Captain cursing Ralph (Ralph, Rath, whatever), sends the Captain home for using foul language. He eventually finds out why the Captain was cursing, and begins to finish putting Ralph away.

Shut Up, Simay

It is at this point that Buttercup, who you have all forgotten about, enters and announces her Secret. "She was a baby farmer in a cabbage patch," McLaughlin carefully explained.

"She wanted to keep it all in the family," Simay elaborated. With this terrible secret out, Ralph becomes the captain, Corcoran (the now ex-Captain) beomes a lowly seaman, Joe finds Hebe, and there is a triple marriage of Corcoran with Buttercup, Ralph and Rath with Josephine, and Sir Joe with Hebe.

Eighteen of the twenty-four roles have been filled. People wishing to audition for the other roles, and people who like to build sets, find props, (Simay, you've been told once) and do general technical things should go by 203 Ruddock.

Fusion

Continued from Page One

the fission systems currently being put into use. In general, fusion specialists' most reasonable hypotheses about the price of the inputs, the cost of the output, and the logistics of putting together the systems

imply that they would be roughly equivalent to those of the fission processes. However, the environmental dangers of the fusion processes would seem to be much lower than for fission systems. For example, the fusion reactions tend to 'go' at a relatively slow rate, so that they can be damped quickly in the event of accident to the reactor, while fission reactions tend to be much more difficult to damp. In addition, estimates yield a higher efficiency and lower rate of thermal loss to heat per unit of usable electric energy for fusion systems than for fission (or for present systems).

Dr. Holdren studied with Dr. Paul Ehrlich, the environmental scientist, and he and Dr. Ehrlich have co-edited and co-authored numerous works on environmental problems. Dr. Holdren was speaking before a seminar presented by the Environmental Quality Laboratory of Caltech.

4:00 p.m.
6:30 p.m.
8:30 p.m.

6:30 p.m.
8:30 p.m.

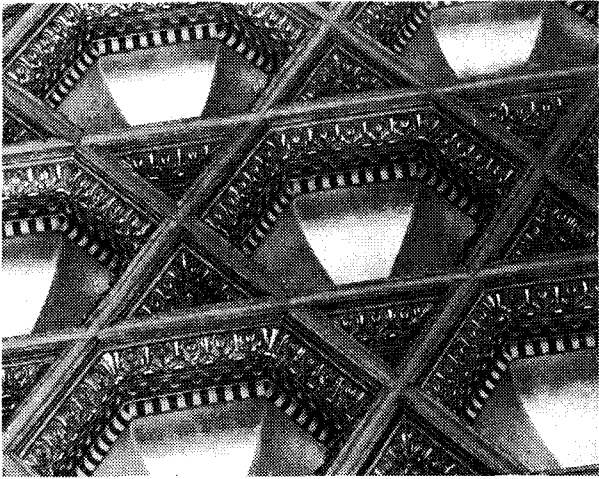
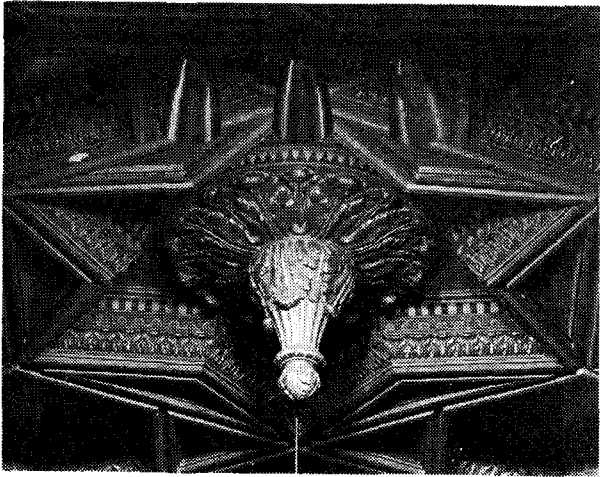
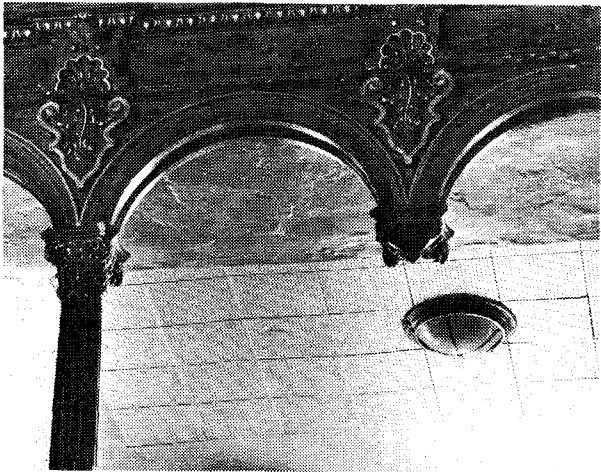
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6:30 p.m.
8:30 p.m.

YE AULD SPORTS MENU				
Friday, January 21				
Swimming	UC Riverside	Home		
JV Basketball	Whittier	Home		
Varsity Basketball	Whittier	Home		
Saturday, January 22				
JV Basketball	Pacific Christian	Home		
Varsity Basketball	Pacific Christian	Home		
Tuesday, January 25				
Varsity Basketball	Cal State Dominguez Hills at Long Beach City College			
Thursday, January 27				
Wrestling	Redlands	Away		
Friday, January 28				
Swimming	Occidental	Away		
JV Basketball	L.I.F.E. College	Away		
Varsity Basketball	L.I.F.E. College	Away		
Saturday, January 29				
Fencing	L.A. Valley College, Cal State L.A.	Home		
JV Basketball	So. California College	Away		
Varsity Basketball	So. California College	Away		





Four Houses Scramble for Interhouse Tennis Crown

by Gavin Claypool

A four-way scramble for first place in Interhouse tennis is afoot, with Fleming, Lloyd, Page, and Ruddock fighting for vital trophy points.

The Ricketts doubles team of Francois Morel and Don Slankard play in the crucial remaining doubles matches. Although Ricketts can only finish fifth, the pair has an excellent shot at the doubles championship.

While by no means definite at press time, extrapolation of results so far yield the following final standings: 1. Ruddock 2. Lloyd 3. Fleming & Page

5. Ricketts 6. Blacker & Dabney.

Mamoru Nakatsui of Lloyd and Jeff Shellan of Ruddock, both freshmen, tied for first place in the first singles division with 35 games. Pat McCrea of Fleming finished third with 31.

In the third singles, Dave Dummit of Page came in first with a total of 43 games. Rick Mitchell (Ruddock) and Tom Howell (Fleming) were second and third, respectively.

The leaders in the second singles were Eric Vella (Lloyd) with 32 games, Larry Niren (Ricketts) with 31 games, and Rich Short (Ruddock) with 30.

Water, Water...

by Bob Kieckhefer

Caltech's swimmers got their first taste of SCIAC competition last Saturday in the annual "no-pressure" relay meet, held at Occidental. As expected, Claremont and Oxy finished far ahead of the other teams, with a Claremont disqualification in the backstroke relay giving Oxy the meet victory, 104-97. Pomona is surprisingly stronger than last year, finishing third with 57 points. Caltech won the battle for fourth place, defeating a very small Redlands squad, 38-34.

Tech's most successful entry was in the 200-yard breaststroke relay, with Desiderio, Kay, Miller, and Bitondo finishing third behind the unbeatable Oxy and Claremont teams. Tech's backstroke relay of Kieckhefer, Harman, Shields, and Sharp also placed third, partly because of the disqualification of Claremont's entry.

Last Friday night the Techers swam in a dual meet at Cal State LA, finishing on the low end of a 78-18 score. (The score was probably worse, but Cal State's manager rarely announced the correct swimmers in any event, and we suspect he probably also had trouble adding up their score correctly.) Tim Hight led the team in scoring, with a first place in the 200-yard freestyle and a second in the 500-yard freestyle. Russ Desiderio got Tech's only other first place, in the 200-yard breaststroke.

Page House Completes

Discobolus Circuit

Page House successfully defended the Discobolus Trophy Monday night, edging Ricketts House 21-18 in wrestling.

Craig Broskow and Rik Smoody pinned their opponents in the 175 and heavyweight classes to bring Page from a 18-9 deficit.

The victory against Ricketts

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—Charlie

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gives Page an overwhelming 14-point lead over second place Fleming, who caused the only spot on the Page record. Fleming tied Page in soccer, but Discobolus rules awards a tie to the defender. Lloyd and Ricketts are right behind in third.

Dave Novikoff won the 123 lb. class by pinning Cliff Brown of Ricketts. The Scurves regained the lead when Bob Durst decided Greg Beall and Randy Lewis pinned dynamic Channon Price. Dave Collier tied it up with a decision over Ken Bickford, but a win by Ken Walker and a pin by Greg Stone—over Vince Fratello and Doug Matchett—put Ricketts nine points ahead. However, Jim Peterson and Francois Morel fell to the Page big guns, Broskow and Smoody, and so did the Scurves' hopes.

Survive!—

Continued from Page Four

Grinder, 1505 E. Washington.

Movie theaters are listed, of course, in your local newspaper entertainment pages, and the **Esquire Theater** at 2670 E. Colorado, in the pages of *The California Tech*.

For general purchases at very cheap prices, I recommend **Disabled American Veterans** at 25 E. Colorado, which has used clothes, mattresses, furniture, cookingware and various other things at student type prices. The **Salvation Army** is also just around the corner, at 65 W. Colorado.

For purchase of food in semi-bulk at wholesale prices, there's **Smart & Final Iris** at 820 E. Walnut. The Caltech Coffee-house used to deal with them.

Well, there are a few places to shop in Pasadena. Happy hunting.

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STUDENT FORUM OF CALIFORNIA

The
CALIFORNIA Tech

Thursday, January 20, 1972

Volume LXXIII

Number 14