

Saga Food A 'Veritable Money Machine'

By Richard Willson

Saga Corp's food division practically runs itself and is a veritable money machine," according to Saga president William F. Scandling, as quoted in a recent article in the L.A. Times. The article went on to reveal that Saga has 38,000 employees and serves over a million meals a day, both through institutional food services and through 202 Straw Hat Pizza establishments.

The firm's three founders were ex-GIs attending Hobart College in Geneva N.Y. when, in 1948, they decided they could do a better job running the school's food program than the institution's administrators. Hobart took them up on their offer, and the three reorganized the school's cafeteria and began privately selling meal tickets to the students. Their business was successful, and they continued in it after leaving school. Canadasaga, an Indian name for the Geneva area, was originally selected as the new company's name, but it was already taken. So the three founders simply shortened the name to Saga.

The article also quoted Ken Smith, the company's marketing chief, as "making clear that on the restaurant side of the business much attention is paid to social research into the habits of Americans. This is in contrast to the contract food division..." Smith went on to say that "in the past few years the public has shifted somewhat away from eating meat and is more interested in poultry and seafood."



Ivor Richards

photo: Joe Digorgio

Black Suffrage Is Not Likely in S. Africa-Richards

Ivor Richard, the British Ambassador to the United Nations, said Monday night that the South African white minority government would never voluntarily allow black suffrage on a "one man, one vote" basis, and that the British government should therefore adopt an "arm's length" policy toward South Africa. The statement was made during a Caltech Y-sponsored panel discussion on the politics of southern Africa.

Richard said that South Africa was, unlike Rhodesia and Numbibia, a clearly independent and sovereign country, and should be treated by Britain as a foreign nation with no special relationships. Calling for "and end to gesture politics as far as South Africa is concerned,"

Richard indicated that instead of using economic and political pressure to isolate South Africa in an attempt to force majority black rule, the western powers should persuade the South African government to work toward a compromise.

Richard further asserted that because the white population of South Africa consisted largely of African-born whites, or Afrikaansers, and not recent settlers, the white majority was "totally unwilling" to voluntarily give political power to blacks. Stating that it was impractical and unreasonable for western powers to demand a majority rule, Richard placed his hopes on a solution between the two extremes of no black political

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Tech Prof to Design Orbiting Space Telescope

By David B. Ritchie

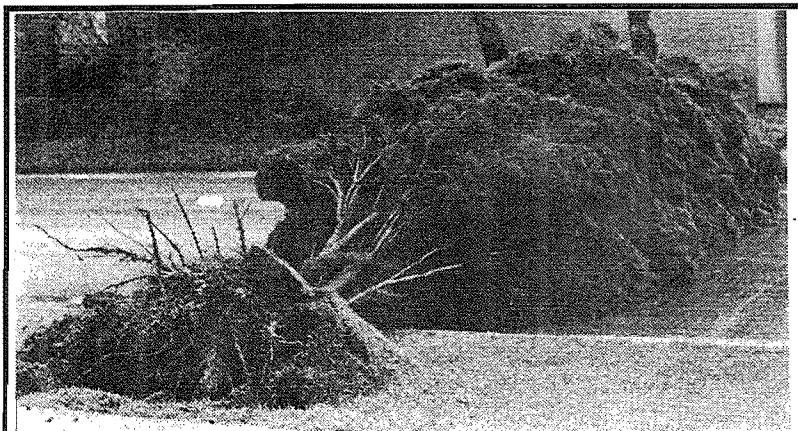
A team of scientists and engineers led by Caltech professor of planetary science James Westphal has been named to design one of the principal cameras for the Space Telescope under a \$20-million grant from NASA. The Space Telescope, a ten-ton instrument to be carried into orbit in 1983 by the Space Shuttle, promises to revolutionize the science of astronomy, allowing a clearer view of celestial objects than has ever before been possible. Westphal said that "It will be as though everything in the heavens were suddenly brought ten times closer."

Orbiting 311 miles above the earth, beyond the haze and distortion of the earth's atmosphere, not to mention the bad weather, the gyroscopically positioned, 84-inch reflecting telescope will allow astronomers to detect objects roughly 100 times fainter than the present ground-based limit. Resolution will be essentially diffraction limited (remember Ph 1) at one-tenth of an arcsecond, about ten times better than the Palomar 200-inch on a good night.

Westphal and his colleagues have been commissioned to build the Wide Field Camera, one of two cameras for transforming images from the telescope's optical system into digital impulses to be beamed to the earth.

The Wide Field Camera, to be constructed at JPL, will use four square arrays of Charge-Coupled Devices (CCD's). As each CCD array has 800 pixels on a side the total area of the WFC image will be 1600 pixels square looking at a 3 arcminute patch of sky. Each element of the CCD, or pixel, consists of a diode that soaks up photons of all wavelengths from ultraviolet to infrared and converts them into quanta of electrical charge so that they can be "pumped" out when the exposure is complete. Then the pulses of charge are modulated onto a radio wave and beamed to earth for image processing to produce a nice picture of whatever the telescope was looking at.

The other major camera aboard will be the Faint Object Camera, under development by the European Space



A fallen tree blocks San Pasqual st., victim of the recent storms

photo: Yin Shih

Like Fleas on a Watermelon

Engineers Shaking Felicia Dam

Earthquake engineers here at Caltech have begun a unique experiment this week as part of their studies of how dams and other structures react to earthquakes. Using large motor-driven weights, they are subjecting the Santa Felicia Dam, an earth dam in the Santa Clara Valley, to controlled vibrations to learn more about its response to earthquakes.

Compared to the six-million-ton weight of the dam, the 10,000-pound force to be developed in the shaking is infinitesimal—about like a flea dancing on a watermelon. Only by using highly sensitive seismometers developed for the first unmanned moon probes will the engineers be able to detect the vibrations. The results will aid in developing better methods of testing dams for earthquake resistance and in designing more earthquake-resistant dams.

The engineers conducting the experiment include Ronald F. Scott, professor of civil engineering; Paul C. Jennings, professor of civil engineering and applied mechanics; George W. Housner, the Carl F. Braun Professor of Engineering; and research fellow Ahmed Abdel-Ghaffar. The experiment is funded by the National Science Foundation and Caltech's Earthquake Research Affiliates.

The Santa Felicia Dam, owned by the United Water Conservation District, was chosen for the experiment because the scientists already have data on how the dam behaved during two California earthquakes—the strong 6.5 magnitude San Fernando earthquake of 1971 and a 1976 earthquake of magnitude 4.7.

"This dam is unique in that it was both subjected to strong shaking during these earthquakes

and was equipped with motion sensors that yielded data on how the dam responded to the shaking," said Professor Scott. "In the past, either those earth dams that experience strong shaking were not instrumented, or else dams that were instrumented did not undergo strong shaking."

"Since we already have data on how this dam responded to two earthquakes, experiments in which we induce vibrations in the dam and measure the results should add considerably to our knowledge of dam response," he said.

"Our measurements of such factors as natural frequencies of vibration of the dam and how energy from a tremor is dissipated in the structure should enable better understanding of how dams respond to earthquakes," said Dr. Scott.

New IHC Chairman - A Man of Many Titles

By Michael Kurilla

Who is the IHC chairman and what does he want? The IHC chairman just elected is Marc Wold, a rather overpowering figure to look at. Like our new ASCIT president, he also comes from Lloyd. Mr. Wold seems to be a man of many titles; besides being the IHC chairman, he is the vice-president of Lloyd and also their BOC rep.

To describe his job, he calls himself a liaison between everyone. The everyone includes people like the Housing and the Master's Office, the administration, and the students. He chairs the IHC or interhouse committee. This consists of the seven house presidents, although the member representing the house is not required to be the president; any officially

recognized person will do. Marc feels that his most important job is to gather information. If Mr. Gang needs to know something about the houses he will ask Marc and then Marc will get the information from the house presidents. He feels however, that his major duty is to obtain information for the students. Many of those boring announcements read at dinner come from someone, through the IHC chairman and then to the houses.

Right now, one of the major issues being discussed, is the meal contract for next year. There are plans afoot to increase the cost by 24 cents per day, giving the students one special meal a week, more meat in the portions, and one solid meat item at every

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No Beer in Coffeehouse

It has been proposed by several people (including at one time out new ASCIT President, Ray Beausoleil) that beer be sold in the coffeehouse.

This seems to me to be a terrible idea for two reasons. Most objectionable is the change in atmosphere that selling beer would cause. The coffeehouse is currently a quiet, mellow place. Selling beer would destroy this atmosphere. It would make the coffeehouse a noisier, rowdier, place. This would be a very undesirable change.

There are currently many places for Techers to go if they want to drink beer. A few of the houses have some sort of pub arrangement, where the house (or a consortium of members) buys large quantities of beer and resells it to members when desired. Also, houses frequently have quarter kegs on weekends. And, if all else fails, there are always local liquor stores.

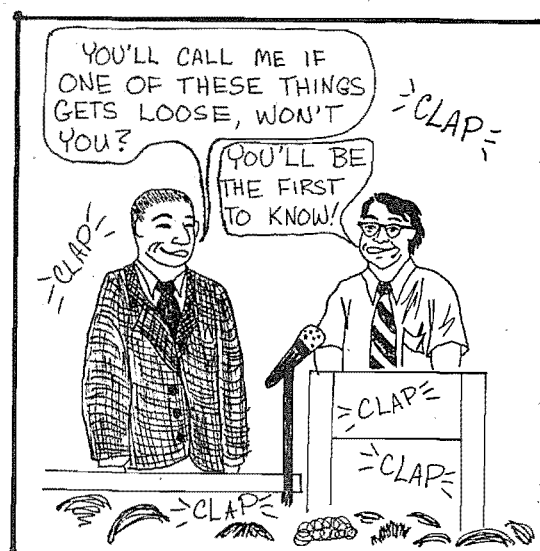
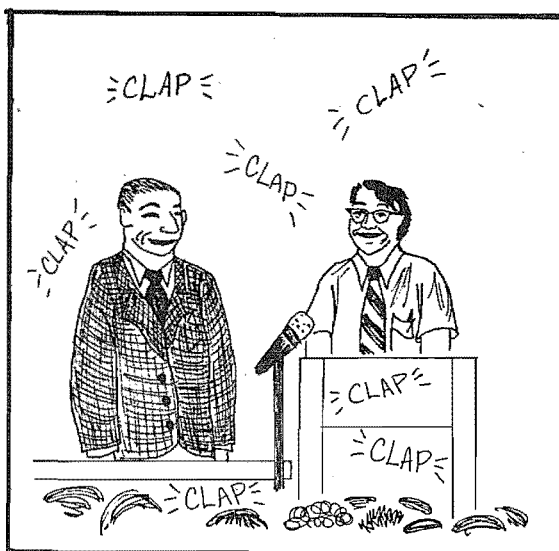
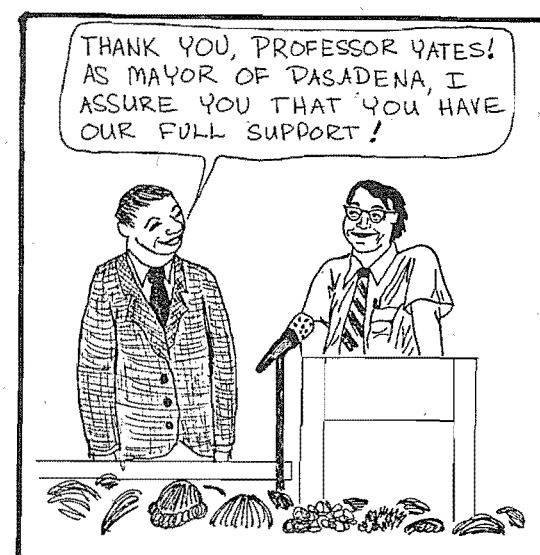
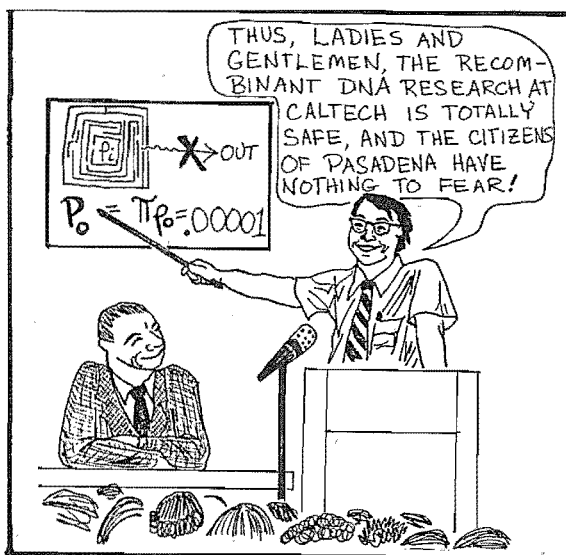
The other reason is the legal aspect. Legally, only about 20-30% of all Techers can buy beer. And, obtaining a liquor license in an establishment where most of the workers are under 21 is probably impossible, to say nothing of the trouble and cost if it is possible. Admittedly, most of the houses serve beer (and harder drinks) frequently (and illegally), but to start selling booze regularly, and to essentially all comers it all too flagrant a violation of the law.

I have been told that this idea has been discarded. If so, this is a good end to a bad idea.

—Spencer Klein

Thuncan

by P.M.



Humanities Reply

To the Editor:

I feel a sense of obligation to respond to the editorial regarding the status of the Humanities and Social Sciences Department. The editor has made some observations that I do not find to be true. First, he claims that there is low student interest in the humanities for a number of reasons, resulting in a lowering of standards in those classes by the professors teaching them. He correlates lowest standards with the faculty members who have been here longest. Generalizations really suck, particularly when they are not true. On numerous occasions, I have been blown away by professors who have been here for quite a while. They are probably most familiar with the techniques of Tech undergraduates to bullshit in areas outside of their competence.

The editor claims that Humanities and Social Sciences professors are lackadaisical about their classes, come poorly prepared, spending most of their time working on their research to the neglect of their teaching duties. I disagree with Mr. Klein. I refer specifically to the 1976-77 Teaching Quality Feedback Report. Of the 190 class evaluations, 31% of them were evaluations of humanities and social sciences classes. Of the 190 class evaluations, 15 of them received double-star evaluations. Of these 15, 10 were in humanities and social science classes. The validity of TQFR statistics can of course be argued, but I think in some sense they show that Mr. Klein's observations are incorrect. 16.9% of the humanities and social

science classes evaluated received double star evaluations while only 3.8% of the science courses received double star evaluations. If in fact, the quality of the humanities and social science classes is far from what it should be, the TQFR statistics suggest that the quality of science courses is four times farther. This observation should disturb Mr. Klein a hell of a lot more because of the fact that Caltech is supposed to be providing a superior quality scientific education.

Nine years ago, the Ad Hoc Faculty Committee on Aims and Goals issued in its preliminary report the following conclusions: 1... (T)he humanities provide not only a counterbalance, but a valuable component in the Caltech educational process... 2. Many of the faculty would like to see more humanistic and aesthetic ferment here, not simply for the undergraduate's benefit, but in order to enrich their own lives and this community. 3... (T)he important role played by the humanities (should) be protected, strengthened, and even somewhat expanded. 4. The Committee supports the strengthening of teaching and scholarly activity in psychology and philosophy. 5. Any expansion in the humanities will necessitate a much larger library. The Committee advocates that planning for a new library be undertaken now. (This was nine years ago!) 6. The Committee recognizes that the existence of humanities majors, and the student demand for increased course offerings at an advanced level are creating problems that need study. 7. In

attracting new faculty members in the humanities, the Institute must face the fact that good men in those disciplines also want those research and intellectual conditions which will allow them to advance their own scholarly achievement. 8. The Committee urges that funding be sought for an Institute of Advanced Study in the Humanities and Arts.

Unfortunately, it seems apparent that these conclusions have not come back to haunt anyone who should care outside of members of the Humanities and Social Sciences faculty and undergraduates who are only hurt by continued delays in improvements that were never begun.

Most people will recognize that the perspectives gained by the scientist in studying the humanities are invaluable. Most agree that the humanities play an important role in the enrichment of one's life. But I have no evidence to suggest that the Administration holds similar views. It would seem that the important role played by the humanities has not been significantly expanded or strengthened as the Committee recommended, and as need has dictated. What happened to the "strengthening of teaching and scholarly activity in psychology and philosophy?" The Humanities Library has not been significantly expanded, and there are no plans that I know of presently for a new library facility as was recommended. I refer specifically to McQ's article of several weeks ago. There have been many additions to the listings of humanities and social sciences classes but as Mr. Klein points out, the offerings actually given are far too few and do not fill the need and demand for increased course offerings at an advanced level. And finally, have you ever heard about an Institute for Advanced Study in the

Humanities and Arts?

Why did the Ad Hoc Faculty Committee on Aims and Goals ever put out a report on the humanities at Caltech if nothing has seemingly every been done?

Some faculty members, pleased with the optimistic tone of the Aims and Goals report made predictions about the state of the Institute in 1978. Included were predictions of a small experimental college devoted to the study of areas such as music, history, English literature, and drama, with a student body of that college devoting only 20% of their time to the study of the sciences. Holdings of the Humanities Library were to be increased to 1,000,000 volumes.

I don't believe that Mr. Klein's solutions to the Humanities and Social Sciences problem would be particularly beneficial. I would see a great deal of resistance to a substantial increase in the required number of Humanities and Social Sciences units to 135 or 162 units. What is needed is an increased respect among the Administration and the Caltech Community for the inseparable and invaluable relationship between the humanities and the sciences; admission policies should include a recognition of this fact. Exchanges with predominantly liberal arts colleges should be promoted—it should become an actively pursued goal to promote the humanities and the arts in this science-oriented environment. I see no reason why the recommendations of the Aims and Goals Committee could not be pursued at this late date nine years after they were originally suggested.

Mr. Klein's final observation is essentially correct. "(It would) cost a lot of money, but Caltech is desperately in need of a better Humanities and Social Sciences

program." Lamentably, anything is to be done, I won't see any result of it during my stay at Tech. Considering the past failure of the Administration to act upon recommendations of the Ad Hoc Committee, I do not see any improvement in the present situation in sight.

Sincerely,

Peter Dewey

The CALIFORNIA Tech

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Swords & Starships

For those of you with a day and a dollar to spend, get ready to do both on Sunday, February 26. Noted science fiction author Alan Dean Foster will be guest of honor at the Nostalgia Club meeting at the Pasadena Hilton. This club is an informal organization devoted to anything its members feel like doing, but largely oriented towards old movies, science fiction, comics and other media type things. Admission to the all-day (9:30 am to 4:30 pm) affair is \$1, with most of the activity to take place in or near the Yosemite room at the Hilton. To get there from Tech, just go west on California about a mile to Los Robles, and turn north for a few blocks until you see an obvious Hilton on the right.

For those of you not knowing just who Alan Dean Foster is, I will attempt to stir your memories. He has written several novels of original material, notably *Icerigger*, *Midworld*, *Bloodhype*, *Orphan Star* and others. A volume of his short works, called *With Friends Like These*, was just released as a Del Rey book. The title story of that collection is worth the price of the book alone.

For those with more esoteric interests, Foster has done several adaptations of films into book form: *Dark Star*, *Luana*, and others. He also wrote the novelizations of the *Star Trek* Logs, based on the animated *Star Trek* shows.

Oh yes, he also wrote the forthcoming second *Star Wars* novel, *A Splinter In The Mind's Eye*. He will be talking about that book, and why it will not exactly match the second *Star Wars* movie, at the meeting.

In addition to the discussion with Foster, there will be dealer tables, smaller discussions, and whatever other events people feel like causing. It's one of those events that can't help but be

worth \$1, so give it a try if you have the time and inclination.

Galaxy Magazine has finished serializing the 'last' book of Roger Zelazny's 'Amber' series. I say 'last' because Zelazny has done it again. While it's true that he wrapped up all of the major plotlines, he ends the book with some of them riding off in search of new threads to unravel.

The fifth book, entitled *The Courts of Chaos*, is curiously unsatisfying in the serialized form. It seems rather short for a full novel, filling only about 100 pages of the magazine. Worse, Zelazny had set up a murder-mystery earlier in the series; and gave the solution in this fifth book, at which point the reader finds out that there was no way to legitimately solve the mystery, since the author cheated. This was an annoying flaw, one of several that Zelazny perpetrated throughout the series. I guess it could have been worse....

On the big and little screens, there is a lot of science fiction and fantasy activity coming up, but slowly. Both *Star Trek* and *Buck Rogers* have apparently been put off until the fall schedules. TV movies based on Spiderman and The Hulk are coming up, supposedly as early as April 5 (the one filmed here on campus may be shown around April 12). Both are being groomed for either full series status, or at least a rotating mini-series.

Word also has it that Ray Bradbury's *Martian Chronicles* will be shown on network TV next season as a mini-series, and that Bradbury is insisting on keeping enough creative control to prevent typical network massacreing.

Lucifer's Hammer the enormous end-of-the-world novel continued on page five

The New York Times

LAGUARDIA ELECTED MAYOR OF NEW YORK; FUSION CONTROLS BOARD OF ESTIMATE; REPEAL OF 18TH AMENDMENT IS ASSURED

3 STATES VOTE WET
Utah Is the 36 Insuring End the Dry Law

OHIO, PENNSYLVANIA
Repealists For in Danger in Ballot

ANTI-REPEALISTS HOLD THE LEAD IN INCOMPLETE SOUTH CAROLINA FIGURES
But Result Will Not Be Known Until Today, When Ballots Are Counted

LARGE VOTE IN KENTUCKY
But Result Will Not Be Known Until Today, When Ballots Are Counted

THE MAYOR-ELECT
Fiorello H. LaGuardia

REPUBLICANS GAIN 8 ASSEMBLY SEATS
Party Will Have 85 Members in Lower House, 13 From City Districts

TENSITY PERVADES TIMES SQ. THROUGHS
200,000 Gritty Await News-Shouting and Cheering of Other Years Is Lacking

CHARTER FIGHT AIDED
Mounted Patrolmen Posted at Ten-Foot Intervals Along Mid-Broadway

DEMOCRATS REGAIN DISTRICTS IN MONROE, ERIE, CHEMUNG AND WESTCHESTER COUNTIES

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DEMOCRATS REGAIN DISTRICTS IN MONROE, ERIE, CHEMUNG AND WESTCHESTER COUNTIES

Friday, February 24 at 8 p.m.
Saturday, February 25 at 2 p.m. and 8 p.m.
Sunday, February 26 at 7 p.m.

Ramo Auditorium (Just west of the corner of Chester and San Pasqual)

New ABC Revolt in Cuba; Planes Bomb Army Camp

By J. D. FILLIPI

HAVANA, Wednesday, Nov. 8.—To be a member of former army sergeants who are now in Cuba, it is to be a member of the Cuban Revolution.

At the correspondent in writing this dispatch, the Cuban Revolution is a story of a man who has been in Cuba for a long time, and who has seen the revolution from the inside.

At the correspondent in writing this dispatch, the Cuban Revolution is a story of a man who has been in Cuba for a long time, and who has seen the revolution from the inside.

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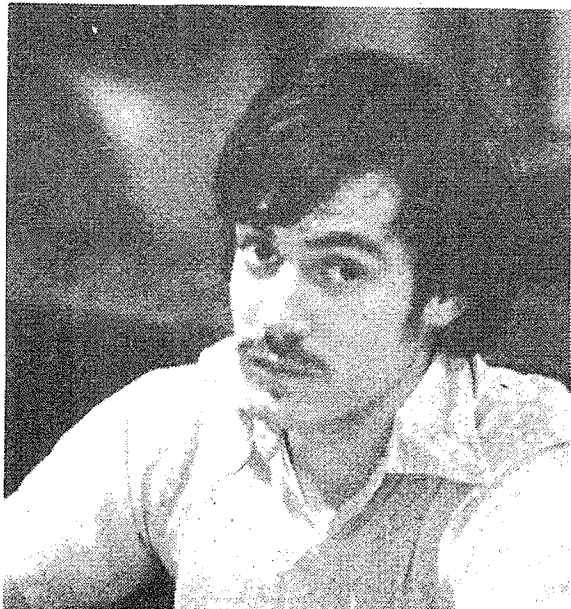
SHAORMA, SOUVLAKI—STEAK DELICACIES BAKLAVA, BOURMA—ARMENIAN PASTRY DESSERTS

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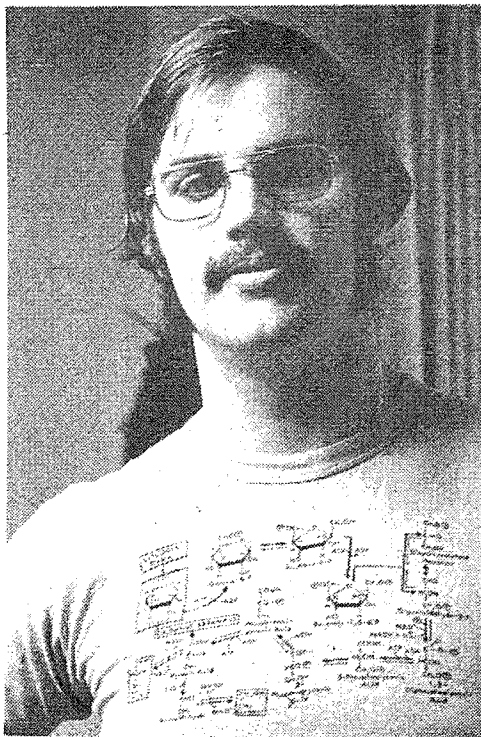
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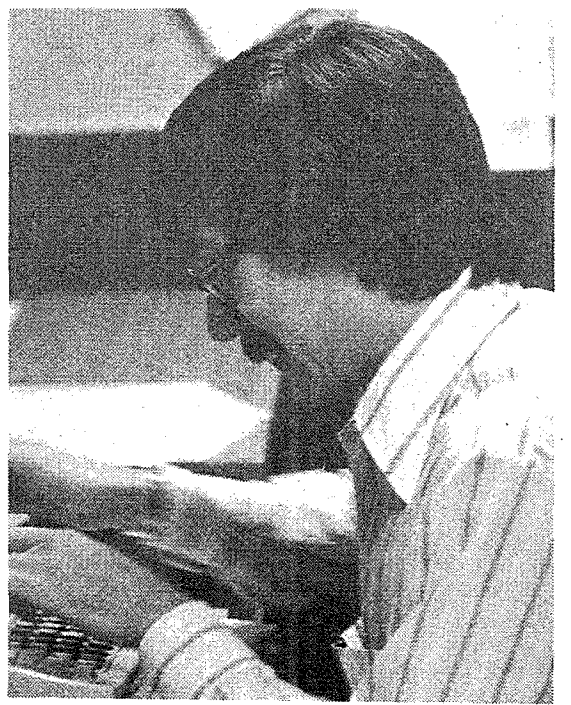
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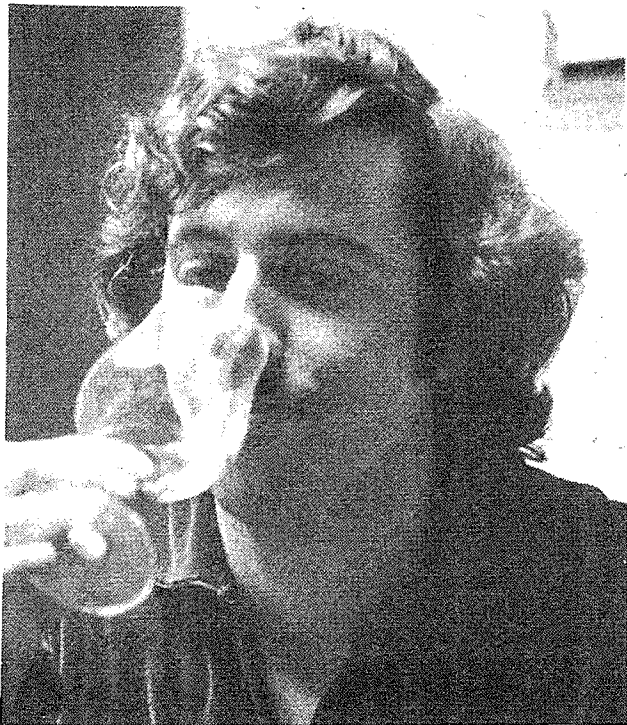
Secretary
Larry Friedrich



IHC Chairman
Marc Wold



Director for Academic Affairs
Jeff Copeland



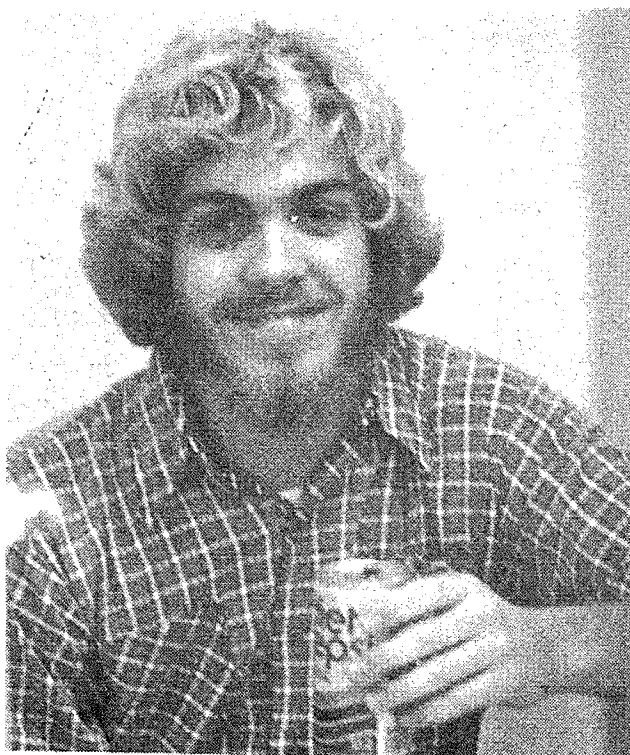
Treasurer
Dan Whelan

Half Your New ASCIT Heroes

Photos by:
Greg Bone
Yin Shih



Director of Social Activities
Leila Gonzales



Director at Large
Dan Ohlsen



Director at Large
Alan Kamei

Short Comment

to the Editor:

The first sentence of my letter January 27 was not an indictment of the *Tech* for printing plot reviews, but merely a sarcastic statement to emphasize the errors of the review of *Close Encounters of the Third Kind*.

All I can say regarding Mr. Hutchie is that while sufficiently humble, he reads letters like he watches movies.

Craig Jones

New IHC Chairman

continued from page one

meal. Talk to your house president and give him your ideas and he will relay them to the chairman at the next meeting. You should also feel free to talk directly with Marc; that's what he's there for.

The IHC functions as a sort of place for the houses as a whole to complain to. Its usual job is to keep things running normally. Marc described the job as "pretty mundane." Its one continual job is the running of interhouse sports events and the discobolus. According to the chairman, the ASCIT Ath Men are answerable to the IHC. This raises an interesting question of the power structure between the IHC and ASCIT. Marc believes they are separate, although he still has a voting place on the BOD, while at the same time, he does not

have a vote on the IHC. As long as the two bodies deal with different affairs, there shouldn't be any problems; so far there hasn't.

The chairman's biggest job and one that will probably keep him up nights and give him tremendous headaches, is rotation. He's the person, along with the secretary of the committee, who decides where all the freshmen are put for that initial week. He also runs the lottery where the new people are divided up among the seven houses.

Right now Marc is beginning to work on the massive rehabilitation project under way for the houses. It is Marc's job to present all the ideas of the houses in some workable form for Mr. Gang to use. He also will see that what the students want,

gets done. For the interested people, the project stands now as concentrating on the room improvements for the old houses and kitchen improvements for the new houses. In addition, the roof over part of the old houses will be repaired. At this point, please note that much of this is speculative and no one can say for sure exactly what will be done, if anything.

Finally, the IHC is looking for a secretary. Three people have spoken up and asked for the job, Marc will make a decision very shortly. As for the people who spoke up, he said, "Anyone would have been reasonable." Marc commented about his picture in the *Tech* this week. He doesn't believe people will think him a nerd because of his shirt. He said, "There's no such thing as a chemistry nerd."

Shakespeare

by Etaoin Schroedlu

The Shakespeare Society of America is alive and reasonably well in Los Angeles. This might not rank as surprising news, considering the continued popularity of the Great Bard, except that this particular Society is not a gathering of erudite professors, but a West Hollywood-based Small Theater (read: virtually penniless) possessed of a magnificent obsession: to perform all of Shakespeare's plays. Readers of these occasional columns will recall that the group has been at it for more than two years; they are now about halfway through. (After they are finished, rumor has it that they will start all over again.)

The latest SSA production, appropriately chosen for January, is *The Winter's Tale*, one of my favorites, which is seldom performed. The original schedule called for it to close last month, but the SSA, with its now traditional disregard for schedules, has apparently decided to extend it, in reportory with *The Boys from Syracuse*, through February 18. Call the theater (1107 N. Kings Road, 650-0208) for exact dates and starting times. *The Boys from Syracuse*, by the way, is a Rodgers and Hart musical version of Shakespeare's *A Comedy of Errors*; the review this performance got was a very bad one, and I'm not sure that I approve of making Shakespeare into a musical anyway (even if Rodgers and Hart do it), so I plan to give it a miss.

Of late some of the SSA productions have not been as satisfactory as earlier ones, but *The Winter's Tale* was very satisfying in almost every respect. The actor cast to play Leontes, as close to a lead part as the play has, suffered a heart attack just as the play was opening, and had to give up the part. Larry Vigus, an SSA regular, had taken over

continued on page six

More Richards

continued from page one

representation and universal suffrage.

The discussion was held in Ramo Auditorium, and was moderated by Y student president, Richard Ackermann. The three panelists were Dr. Edwin Munger, Professor of Geography at Caltech, Dr. Jane Isano, a visiting research fellow at Caltech studying U.S. Foreign Policy in an Interdependent World, and Dr. David Chaniawa, Professor of History at Cal State Northridge and a Rhodesian by birth.

Richard made a clear distinction between the three major problem areas of southern Africa. Rhodesia he sees as a colonial problem like any other British colony. Namibia, formerly South-West Africa, he sees as a problem for international settlement. Only in South Africa does he see a struggle between native-born white Africans and black Africans in a purely internal political situation.

Rhodesia, a self-governing British colony since the 1920's, under the leadership of Prime Minister Ian Smith, who set up a white minority government in 1965 and declared Rhodesia independent. Britain has never recognized this independence, however, and Richard said that Britain would not grant independence until majority elections are held. He sees the main problem as working out a transfer of power from minority to majority that will reassure the white population of a peaceful transition and will reassure the blacks that the transition will be irreversible. After this is negotiated, elections can be held, and Britain will turn independence over to the new government. Once fair elections are held, Richard said, "we have no conceivable interest in retaining Rhodesia as a British colony."

Namibia, a German colony until 1918, was mandated by the League of Nations to be run by South Africa. The U.N., however, has recently revoked this



Ivor Richards

photo: Joe Digorgio

mandate, and the International Court of Justice has declared the presence of South African troops there illegal. South Africa, however, refuses to leave. Negotiations are currently being held between the members of the U.N. Security Council, South Africa, and the leading independence movement in Namibia. While these negotiations have not yet succeeded, said Richard, they have not yet broken down either. The goal of the Western Powers is free majority elections, and Richard seemed optimistic of settlement.

Richard was not as optimistic for South Africa's future as he was for either Rhodesia's or Namibia's. Calling the situation "infinitely complex," he noted that European settlers had landed in the uninhabited southern tip of Africa as early as the 1600's, and therefore the Afrikaners have as much claim to the land as Americans do to the United States. Richard said that within the South African white community, ideas were being discussed aimed at some sharing of power with the black majority, but that since no dialogue was taking place between whites and blacks, the political situation was becoming even "more polarized." He urged the Western powers to attempt to establish negotiations between the two parties, to bring about

an atmosphere for compromise. He vehemently opposed a western policy of increased economic and political pressure on South Africa, explaining, "My judgement is, the more you push them, the more they would stiffen." He noted that the Afrikaners had a history of withdrawing and becoming antagonistic under pressure.

In response to a panel question, Richard dismissed as a viable solution the current internal talks being held in Rhodesia without foreign powers present. Noting that two major independence movements involved in guerrilla warfare were left out of the talks, he said that a solution from these talks would fail because it could not stop the guerrilla war.

Also in response to a panel question, Richard denied that British policy was shaped only to protect British economic interests in South Africa, though he admitted that Britain did have a heavy economic involvement.

Richard was born in southern Wales, and became a supporter of the labor party "almost from the time he could speak." After gaining an education at Oxford, he was elected to Parliament in 1964. Upon losing his seat in 1974, he was appointed British Ambassador to the United Nations. In 1976, he served as chairman of the Rhodesian Conference held in Geneva.

More S & S

continued from page three

by Larry Niven and Jerry Pournelle, is apparently going to go into movie production. Agents have already been asked to send in resumes for use in casting. This one is going to be either very good or disgustingly bad. Three guesses which is more likely, unless they forcibly prevent the Hollywood hacks from getting their claws in it. So it goes.

-Nick Smith

Gemstone Fakery Discussed

By George Woodward

It is now possible to artificially color some gems to make them more valuable. This was the topic of a lecture by Dr. George R. Rossman, Associate Professor of Mineralogy at Caltech. There are several techniques used to enhance or even change the color of gems. These methods range from fraudulently adding dyes into a stone, to using a radioactive source to alter the electron states.

Most pure crystals are colorless. The brilliant hues seen in gems are created by metal impurities in the crystal. Jade's green color is caused by a .5% chromium ion impurity. Jadite, a more common and cheaper stone, is often doped with a coal tar dye to give it the appearance of jade. This is the simplest form of artificial coloration and is easily detected by running a visible absorption spectra. Analysis of the spectra shows the large difference between the chromium ion and the dye.

Another example of mineralogical detective work involves turquoise. Synthetic turquoise is chemically similar to the natural variety. It also has the

same optical properties, same visible spectra and same density. It seemed an almost impossible task to tell them apart. Dr. Rossman and his colleagues took on the challenge. By analyzing the infrared spectra of the two gems, they detected a slight difference, thus solving the problem.

Yellow Topaz fades slowly in sunlight to a colorless nonprecious stone. However, yellow topaz can also be heated in a furnace and converted to a rare and valuable blue topaz. Clear topaz can be treated by high doses of radiation and turned yellow. The processes occurring here are related to the energy levels of the electrons in the crystal. There are only certain discrete energy levels allowed for the electrons in the topaz crystal. In yellow topaz the electrons are in an unstable, high energy state. Visible light kicks the electrons into the lowest energy state in which the topaz is colorless. In contrast, high energy particles from a radioactive source promote the electrons into a higher energy state. By heating yellow topaz, some electrons are put into an energy state midway between those in yellow and clear topaz,

Gray Honored Again

Robert D. Gray, recently retired director of Caltech's Industrial Relations Center, has been honored by the Los Angeles City Council for his contributions to labor relations and management education in the Los Angeles area, the state, and the nation.

In a ceremony at City Hall last month a resolution was presented to Gray citing him for his accomplishments in industrial relations, which "have been an important factor in the economic development of the Los Angeles metropolitan area."

The resolution honoring Gray was sponsored by Councilwoman Pat Russell (6th District) and Councilman Dave Cunningham (10th District).

Other achievements of Gray listed in the resolution were his educational work at the Industrial Relations Center that "has benefitted both employers and employees throughout the United States" and his training programs during World War II that "met critical personnel needs of the war effort."

Gray ended his 37-year directorship of the Center when he retired last November. He was succeeded by Victor V. Veysey, former Assistant Secretary of the Army and a distinguished Caltech alumnus.

Shakespeare

continued from page five

the part by the time I saw the show; he had not yet learned the entire part, however, and was obliged to carry some of it around on parchment to consult at need. He carried this off as well as could be hoped for; in the first long scene, which he did have memorized, he made it clear that he has the ability to perform a memorable Leontes. Maureen Jane Teehy did a very nice job as Perdita, the lost daughter of Leontes, and Ralph Steadman was memorable as the rogue Autolycus.

I asked R. Thad Taylor, founding fanatic of the SSA, what they will be doing next. He said that they will be doing the three parts of the history of Henry VI; as he put it, they'll be "getting rid of them." There are several Shakespeare plays which are real stumbling blocks to efforts to perform all 37 of them; the three Henry VI's are high on the list. They are among Shakespeare's earliest plays (although John, Richard II, Henry IV, and Henry V all preceded Henry VI historically, the Shakespearean plays based on them were not written until later), and the general tone of the plays is of unrelieved gloom and disaster. It is not impossible to do a popular Henry VI—a few years ago the top-notch Ashland (Oregon) Shakespeare Festival succeeded admirably—but it is very difficult indeed, and one can sympathize with Mr. Taylor's attitude.

By E. Schroedlu

While recently browsing in my world Almanac looking for something else, I came upon an interesting list of names. In connection with an entry on "Washington, Capital of the United States," there was made mention of a National Statuary Hall, connected with the Capitol (not Capital, this time), wherein each state has, since 1933, been allowed to commemorate exactly one of its sons, or daughters, in statuary form. (Statues of additional distinguished individuals, scattered about the Capitol building, are also listed. In fact, for reasons unknown, Alaska's and New Mexico's two Number One entries are not present in the Statuary Hall either—perhaps the Hall ran out of room—but the Almanac carefully lists those states' primary favorites separately from any second stringers.)

The list of names of the fifty greats had some interesting inclusions, and even more interesting exclusions, all of which led me to begin thinking about Great Americans. The first thing I noticed about the list is that it seemed to contain very few of the best-known, if not greatest, Americans. In fact, a careful reading of the list turned up the interesting fact that not one U.S. President was present—presumably they have their own resting places elsewhere—although there were at

least three temporal or spiritual leaders of some consequence listed: Hawaii's King Kamehameha I, Mississippi's Jefferson Davis (leader of the Confederate States of America), and Utah's Brigham Young. (I think that Sam Houston, Texas' representative statue, was head of the Lone Star Republic there, but I'm not sure about that.) There was at least one Vice-President present: Maine chose Hannibal Hamlin, who achieved undying fame as Abraham Lincoln's first Veep.

Evidently there were no stringent rules on qualifications such as birthplace: Sam Houston was born in Tennessee, for instance, and wherever Brigham Young was born, it wasn't Utah. For that matter, of course, Hawaii's King and California's mission founder, Junipero Serra, never did set foot in the United States, properly speaking. On the other hand, Pennsylvania, which could have chosen William Penn or Ben Franklin, named Robert Fulton, whose great invention was demonstrated somewhere else entirely.

Despite the exclusion of Presidents, most of the statues were of former politicians. Among the intriguing exceptions were Serra, Colorado's Dr. Florence Rena Sabin, 'scientist', Montana's Charles Marion Russell, 'artist', Oklahoma's Sequoyah, 'Cherokee leader,' and Wyoming's Esther Hobart Morris, 'suffragette.' (The latter reminds us that in Wyoming women had the vote a full 50 years before they won it in the U.S. as a whole—an event which took until 1920 to happen.) A few of the more notable politicians, mostly

referred to as statesmen, present were New Hampshire's Daniel Webster, Kentucky's Henry Clay, Massachusetts' Samuel Adams, and Wisconsin's Robert LaFollette, Sr. The surprising short list of military men was headed by Virginia's Robert E. Lee.

My own home state of New Jersey, I was sorry to note, chose neither Woodrow Wilson nor Thomas A. Edison for a representative; Wilson was presumably barred, but Edison would have been much more suitable than a politician whom I had never heard of. (In fact, I can only recall having heard of about 29 of the 50.)

The list did trigger in my mind the thought of who would be the most suitable person to pick, if we wanted to choose someone who would best represent the peculiar genius of the American people (if there is such a thing), both in its strengths and weaknesses, who could come closest to capturing the sense of what America has been in the world, rather than Churchill could do for England or Gandhi or Nehru for India. No doubt many persons could capture some part of it (even excluding Presidents, we very quickly think of such names as Mark Twain, Robert E. Lee, Henry Ford, William Allen White, Babe Ruth, and Will Rogers). I invite readers of this paper to send in your own nominations of individuals to fill this ill-defined position, and reasons why you have chosen as you have. My own nomination is Thomas A. Edison, although I won't give the reasons for it here.

More Space Telescope

continued from page one

Organization. It will have a resolution of 1/400 of an arcsecond but a much narrower field of view. It will be used, among other things, to look at individual stars which it will be able to resolve. It is hoped that other planetary systems will be found with this device as it will be able to measure with extreme accuracy any perturbation of a star caused by a large planet in orbit.

Scientist members of the camera team include William A. Baum of Lowell Observatory, Arthur D. Code of the University of Wisconsin, Douglas G. Currie of the University of Maryland, G. Edward Danielson of JPL, Bradford A. Smith from the University of Arizona, James E. Gunn from Caltech, Jerome Kristian of the Hale Observatories in Pasadena, C. Roger Lynds of Kitt Peak National Observatories, and K.E. Seidelmann from the U.S. Naval Observatory.

As observing time on the telescope is expected to be in fairly high demand, there will be an observing board of practicing astronomers to oversee the use of the Space Telescope, but it seems

to be agreed that the first year will be almost entirely devoted to the use of the various organizations developing the cameras. After one year outside observers with extremely good projects will be allowed increasingly larger allotments of time. After two and one half years, Space Shuttle astronauts will check out the telescope and fix whatever needs fixing and replace some instruments. After five years the telescope will be brought back down to the ground for a major overhaul and newer instruments.

The telescope has something called "Serendipity Mode" where all instruments are on, regardless of who is operating it and what they are looking at. This way valuable data will not be lost and some day someone can go

through the reels and reels of computer tape looking for interesting things in the WFC pictures that were recorded perhaps when someone was using the spectrograph on the Faint Object Camera.

Current expectations are that the Space Telescope with all of its instruments will provide new insights into the creation of the universe; quasars, galaxies and gaseous nebulae will be studied in more detail, studies will be made of the atmospheres and surface features of the far planets, but, as Westphal said, "The possibility of the discovery of other planetary systems is undoubtedly one of the most exciting prospects for use of the Space Telescope since it greatly increases the likelihood of life elsewhere in the galaxy."

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All The News
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Job Interviews
The following companies will be recruiting on campus during the week 20 February-24 February:
21 February--Aerojet, Raytheon;
22 February--TRW-Vidar, American Microsystems, IBM;
23 February--Ford Motor Co., The Kennedy Co., Intermetrics, IBM;
24 February--Hughes Aircraft Co.
Sign-ups for on-campus interviews may be made in the Placement Office, Dabney, Room 10.

Letter Jackets, Again!
ASCIT Ath Men will order jackets on Feb. 28. Lettermen may order in Page 142. There will be a fitting session from 7:30 to 8:30, Feb. 21st in the Page Dining Room. The order made about a year ago was lost. If you still want a jacket: reorder.

H₂O Plants
Interested in hydroponics? Here is your big chance. People interested in giving you an acre of land (water??) and some money to let you explore your ideas in this new field of farming. This is part of a restoration of a Historical House in Azusa. Call Gayle Avakian at 334-1885.

Ray Bradbury On Mars
The Caltech Y is sponsoring an outing to see the performance of Ray Bradbury's *Martian Chronicles*. There are 25 seats available at a cost of \$2 (transportation included). The date is Mar. 31, the first Friday in third term. Sign-up in the Y office.

Future Ex's?
The Caltech Y is now accepting applicants among undergrads and grad students for membership on the Y's student ExComm. The ExComm is part of the Y's Board of Directors, and the ExComm's members make program decisions and arrangements for the Caltech Y.

To Whom It May Concern:
Be it known throughout the land that on Wednesday, the 22nd of February, at 8:45 in the evening, the invincible Scurve Toshi will further their inexorable progress toward immortality.

Big T Help
The Big T is looking for an editor(s), assistant editors, and a business manager and staff for this year and next. Sign up on Flora's door.

Get Some ASCIT Money
Any organization desiring ASCIT funding for the next fiscal year must file a written request by May 1st. Contact Dan Whelan at 449-9360 or write to 1-60 or 2-157 for budget request forms. Established organizations which were funded this last year will receive budget request forms.

Redate Yourself?
Next Wednesday, Feb. 22 at 12 noon, Dr. Clarence Allen will give an UPDATE noon discussion presentation on the question "Are Hopes for Earthquake Prediction Realistic?" The Caltech Y is sponsoring this event and encourages you to BRING YOUR LUNCH and rap with a real live geology professor.

Modeling School?
Model U.N. meeting Thursday, Feb. 23, 7:30 pm, 211 Baxter.

Munch Those Veggies!
The Caltech-JPL Vegetarian Group will be having a get-together on Wednesday, February 22 at 8 pm in Winnett Lounge, for the purposes of sharing thoughts and exchanging information. For further information contact Kiran R. Magiawala, Ext. 1792 or 796-2113. All welcome.

Caltech Riding Club Organizes
There will be a meeting at 2:00 pm on Thursday, Feb. 23, for all those who signed up for riding lessons with the Caltech Riding Club. We will discuss level of instruction, what to wear, and transportation with Mrs Kellogg of the Altadena Riding Stables. The meeting will be held in room 23 at the gym. If you won't be able to make it please contact Lora Brubaker at mail code 1-54.

Interhouse Track

Four days of good weather finally made the Interhouse Track meet possible. Prelims for sprints and field events were held yesterday, and the finals in the running events are scheduled for 4:30 this afternoon.
While the Russian flu clearly dominated the field events, Page and Fleming were close behind. At the completion of the field events the score was Page, 48; Fleming, 40; Lloyd, 17; and Ricketts and Ruddock tied at six apiece. The flu caused so many scratches in some events that Prelims were only held for the 330 and the 220.
Kurt Runge of Page won the shot put with a 34'3". Second was Mark Wold's 33'11", and Werner "Tennisball" Pyka's 31'4 1/2". Two Flems and a Rudd were fourth, sixth, and fifth. In the javelin, Page went 1-2 with Tom Boldt at 162'3 1/2" and Pete Kezios at 143'10". Jerry Jacobs of Fleming was third at 142'9",

and Dan Ohlson of Ruddock was fourth at 123' 8". In the discus, Brian Sutula of Fleming won with a throw of 109'2 1/2", Page's Rich Gayle was second at 101'1 1/2", Lloydie Jim Hunter was third at 96'9", and Pat Huber of Fleming took fourth with a 89'7".
Jim Eckman of Ricketts won the long jump with a 20'2 1/2" jump. Doug Talley of Lloyd took second at 19'5 1/2", Francis Mukai of Page was third at 19'4", and Pete Edwards was fourth at 18'11 1/2". Greg Blaisdell went over six feet to win the High Jump, while fellow Flem Eric Erickson was second with a 5'4". Kezios and Eric Peterson of Page took third and fourth.
Finals in the Running events are expected to be pretty tight, and some Interhouse records may be broken. The scoring is 6-5-4-3-2-1 and Page hopes to hold onto the slim edge they got in the field events.

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Truffaut shown Saturday

This week Cinematech travels to France for two of Francois Truffaut's early films. Truffaut was part of a school of thought in Europe that has come to dominate the film world today. In the '50s, an idea was developed that believed one person was responsible for the style and themes of any film. In France this was referred to as the "Auteur" theory. Today there is little doubt in associating a film with a director, that the film is somehow his creation, although there are literally hundreds of people involved with putting the film together.

The first feature is *The 400 Blows*, Truffaut's first full-length film. As a correction to the Cinematech flyer, the film was made in 1959 and not 1969 as listed. It has been cited as one of the New Wave masterpieces. Truffaut presents the viewer with the childhood of a boy who received very little attention. The film is partly autobiographical in nature, but Truffaut leaves the audience with no message or lesson. The final scene of a boy standing at the edge of the sea, trapped and hunted by the police, freezes into a still photograph.

The second feature, *Shoot the Piano Player*, was made a year later. Here, Truffaut presents a half-thriller and half-parody. The story concerns a man, named Charlie Koller, a piano player who was once Edward Saroyan, the pianist. Truffaut follows the attempts of a man to remove himself from all complexity of living. From a technical standpoint, the film uses more of the medium than others usually do. The strong emotions

transmitted during the story are done through the mechanics of the cinema and not through the dialogue.

Cinematech films are screened on Saturday nights in Baxter Lecture Hall at 7:30 pm. Donations are \$1 for ASCIT and GSC, \$1.50 for the general public, and 75 cents for children under 14.

The ASCIT movie this week is *The Candidate* starring Robert Redford. Redford plays a politician who's fed up with the corrupt political machinery. He's involved with civil rights and ecology. The National Observer said it's "mature and cynical in a grown-up way." for 50 cents it's a good deal.

Michael Kurilla

HALE MOURNED

Stanton G. Hale, a trustee of the California Institute of Technology, died recently in Los Angeles after a lengthy illness.

At the time of his death, Hale was a director of Southern California Edison Company, Carter Hawley Hale Stores, Inc., Santa Anita Foundation, and Pacific Telephone and Telegraph Company. In addition to being a trustee of Caltech, he also served as a trustee of the Henry E. Huntington Library and Art Gallery and the Boys' Clubs Foundation of Southern California.

Previously Hale served as a director of Western Bancorporation, Pacific Mutual Life Insurance, United California Bank, the James Irvine Foundation, Los Angeles Chamber of Commerce, California State Chamber of Commerce, and the American Cancer Society, Inc.

Hale graduated from the University of Idaho in 1932. He was awarded an honorary Doctor of Administrative Science degree from the University of Idaho in 1973.

\$£%#/()! Northridge

Hockey Goes to 5-1

By G. T. Yokum

Extending their winning streak to four in a row with a 5-1 victory over Northridge last Sunday night, the Caltech hockey team has moved into third place in their league. The dirty, cheap-hitting, low-down Northridge team came to Pasadena seeking revenge for last week's 6-1 loss to the Beavers. After a tough-fought and scoreless first period, Northridge managed to slip the puck past the snoring Caltech goalie (Slurper Junghans) early in the second period. The Slurper then used his powerful potion (brewed in the basement of Crellin) and completed the game in flawless fashion. Northridge's lead was short-lived as Jungle Jennings, finding himself in front of the net with what he thought was a dried-up coconut, smartly deposited it in the opponent's net. The third period was all Caltech, as the Techers pounded home 4 goals. The go-ahead goal came on some slick stick work and a tight passing routine between Greene and Yates. Bill Greene was chosen as the Beaver of the game, having accumulated 2 goals and 2 assists. Norm Bobroff, after putting in the fifth and final goal, yelled "That was totally redundant, completely repetitive and without any lasting value. I did it only for the glory."

Caltech's most productive offensive line, comprised of Wood, Culick, and Lye (affectionately called the "Style Studs") was unable to score Sunday. They hustled all over the ice, passed stylishly, and took 70% of the team's 31 shots on goal. Sensing their frustration coach Warden counseled "Don't worry boys. Fulfillment will come. You just have to pray to the right gods."

Throughout the game the Northridge players behaved in their normal manner (like

flaming assholes). They don't seem to comprehend that the game is ice hockey and not punch the other guy. They had more cheap shots at Techers than they had shots on the goal. Fortunately this was the last regular season match against Northridge.

Fritzie was there and in a post

game interview she said "I love every minute of it! I think being a fan is more fun than playing the game." It has also been confirmed that she is sweet one of the Style Studs.

The next game is again Occidental at 10:45 this Sunday night at the Pasadena Capades Chalet. Admission Free!

Tech baseball opens hot

by Seymour

Caltech opened its baseball season with a 13-1 victory over Pacific Christian Wednesday. Pacific led from the 2nd inning to the 4th 1-0. In the bottom of the 4th, however, the Beavers exploded for 13 runs, sending 17

men to the plate. The inning was capped by Bob Winchell's 3 run homer—a line drive that just kept on going. Keeping Pacific in check in the batting dept. were Jim Abbott and Doug Rountree, who together held P.C. to 2 hits and

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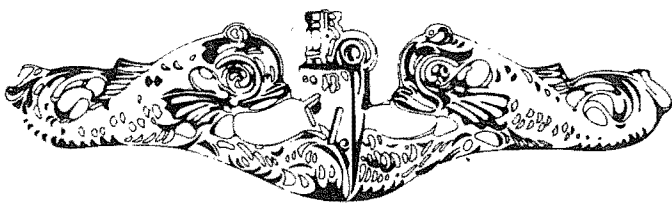
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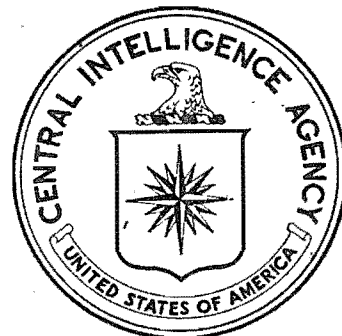
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