

## Election Results Rejected; May 18 New Election

by Gavin Claypool

Friday's class elections and ASCIT special election were invalidated Monday by a vote of the Board of Directors. The action came in response to protests raised by Alan Shiller relating to the writing-in of "no" votes.

Shiller stated that some members of Ruddock House believed writing "none" or similar phrases constituted a "no" vote. It had become known that the Election Committee had counted only explicitly-written "no" votes, relegating the "none" and other votes to the "obscure" list. The closeness of the vote for Social Chariman indicated that the ignorance of some students on how to vote "no" correctly may have made a crucial difference.

It was generally agreed that balloting instructions should be included on the ballot, or be otherwise made available. Appeals to the fact that correct balloting procedures appear in *the little t* were to no avail.

It was also generally agreed that nominations should not be reopened for the offices, as an adequate time had existed for sign-ups. An exception made for two sophomore offices (secretary and treasurer), which had no nominated parties. Nominations for those offices will close 6 p.m. on May 15, with the rerun election on May 18.



THROOP MAY no longer exist, but the Caltech Glee Club is still going strong. The Club will present its annual Home Concert Friday and Saturday in Beckman.

## For Best Overall Emissions

# Clean Air Car Project Wins Award

by Gary Rubenstein

Using an eleven-year-old turbocharger and fifteen-year-old carburetion designs on a three-year-old car, Caltech's Clean Air Car Project received the "Best Overall Emissions" award in the R.E.D. (Reduced Emissions Devices) Rallye sponsored by U.C. Davis last weekend. The CACP's American Motors Hornet also placed second in the "Best Overall Performance" category: a combination of tests to determine emissions, economy, power, and reliability — Oregon Technical Institute was the "Overall Performance" winner, with 396 points to Tech's 391.

The emissions competition was almost a joke — the propane-powered Hornet received 432 points out of a possible 200 (huh?), with 0.29 grams/mile hydrocarbons, 0.52 grams/mile carbon monoxide, and 0.078 grams/mile nitric oxides. The 1970 Clean Air Act requires auto makers to achieve a 90% reduction in each pollutant by 1976. The CACP emissions represent reductions of approximately 86.8% hydrocarbons, 97.7% carbon monoxide, and 98.0% nitric oxides. (It should be noted that the Environmental Protection Agency recently granted Detroit a one-year delay on these

# Behavioralists Tell of Impact on Society

by Etaoin Schroedlu

The Caltech Y presented its second "Impact" conference last Saturday, on "The Impact of Behavioral Engineering on Society," focusing on behaviorism and behavioral engineering, made famous in recent years by the writings of Harvard psychologist B. F. Skinner. The first conference in this series, the highly-successful "Impact of Genetic Engineering on Society," was held last year.

Caltech Biology prof Lee

Hood opened the conference by outlining its goals to be to educate the Caltech community on behavioral and humanistic issues and to provide an opportunity for Caltech and the community at large to interact and discuss the matters at hand. Then Dr. John Whiteley, associate professor of social ecology at U.C. Irvine, assumed his role as conference moderator and introduced the first speaker, Dr. Carl Thoresen of Stanford.

Queer Roosters?

Dr. Thoresen, an associate professor of education, was speaking from the point of view of the behavioralists. After assuring the audience that he was not there to defend B. F. Skinner — "He is perfectly capable of defending himself." — Dr. Thoresen presented a sample case of how behaviorist approaches could alter the anti-social behavior of an individual in order to make him behave in more socially-acceptable ways. After a brief statement interpreting the humanistic approach to human behavior, Dr. Thoresen surveyed the history of behaviorism, which began with a very simple, Pavlovian stimulus-response model of human behavior, and has since progressed to a more complex model in which man both influences and is influenced by his environment. Dr. Thoresen responded to a general criticism

Continued on Page Eleven

## Nixon's The One!

# There Was A Sign In The Sky . . .

by I. Was Wett

The names of most people in this article have been changed to protect their identities and to attempt to limit the number of obscene phone calls they and/or their RA receive. Names of certain people have been withheld because it is uncertain whether they will be alive at press time. Note, however, that "Richard Nixon" or "Nixon," as used herein, refers to the current president of the United States, and should not be considered to be a pseudonym.

Recent court actions indicate that the press may or may not be required to reveal its news sources. In this article, news sources are not revealed. If you cannot guess who the participants are, consult your local FBI office (796-7852).

The sign had been in planning stages for more than eleven months, following the May 11 and May 12, 1972, sign fiascos. These two signs, as you may recall, existed on the east face of Millikan Library for less than six hours each. Many people who slept late on those days following the mining of Haiphong harbor

never saw the "OUT NOW" landmarks.

Mark Warmbrow developed the design for the sign's expansion anchors. Research conferences were held at many locations at Caltech, and, to throw the enemy off guard, at other sites outside the United States (the Weasel River valley, for instance).

Once the anchor design existed, only a sign was needed. Various members of Damney House suggested that the second-rate burglary job at the Watergate Hotel was maybe just a teensy-weeny bit less than excusable, and the phrase "Impeach Nixon" was decided upon for the sign.

Wednesday

On Wednesday, May 2, the men and women of Damney House flicked in their studies to begin their independent-study project. Supplies were bought: 39 yards of muslin, 100 feet of lumber, 2 quarts of toluidine red paint, 2 pounds of aluminum, thread, nuts and bolts, and various sundries.

Construction began on three fronts on Wednesday night. Carl

Josephson and Rich Keyfaker sewed muslin strips together after figuring out how to run a sewing machine. Meanwhile Pete Gloater, Tungsten Blark, and others were assembling the 16x22-foot frame, and Warmbrow and the aluminum searched for a mill.

Thursday Morning

After the sewing (it was by this time Thursday morning), Keyfaker, Rich Richardson, Mike Parasite, and others trolled out the letters on the muslin ("say, how do you spell 'impeach?'"). Soon the 2x3-foot red letters proclaimed to the dining room roof: "IMPEACH NIXON." Meanwhile Warmbrow was coaxing various mills into action. After four hours of this exciting work, he decided to flick it in for the night, and so our heroes got a few hours sleep.

Thursday Afternoon

On Thursday afternoon Warmbrow and Keyfaker drove to Altadena and Sierra Madre in search of better milling apparatus. On Thursday night the final work sessions began. Warmbrow, Keyfaker, Jim Moron, and later

Continued on Page Nine

standards.)

The Hornet does not have any catalytic converters or other exhaust clean-up devices. It relies on extra-lean carburetion with carefully designed mixture controls to provide the driver with the power he needs, when he needs it, with a minimum amount of pollution. That power, incidentally, enabled the Hornet to run a quarter-mile from a standing start in less than 19 seconds. It was the second fastest entry in the total field of ten vehicles, (from seven schools and one Datsun dealership).

You Can't Beat Thermo!

The principle behind the tuning is simple — it is merely a way to beat thermodynamics. (Apologies, Hans). The turbocharger raises the engine pressures while the lean air-fuel mixture lowers the combustion temperatures, thus producing 40% more power with a fraction of the original emissions. The fuel penalty involved (taking into account the different energy

Continued on Page Five

Corporation Meeting  
Today  
Please turn to  
page eight

## Sturtevant Memorial



LAST WEEKEND, the plaque pictured above was dedicated in Crellin Gardens. Crellin Gardens can be found in back of Gates. Photo by Gerald Laib

**Editorial**

# Pleading the First

During the past half-decade, this nation has been engaged in a process of self-flagellation. It has weighed and pondered its every move. And this is all for the good. When a man ceases to weigh his every judgement and takes a course of gut-level reaction, he becomes less than a man.

Throughout history, two basic responses have developed; a form created. At times, those who prefer to tear down and build from nothing have prevailed. At times, those who prefer to build from existing foundations have prevailed. At times, neither has prevailed.

The United States is currently in the midst of one of these times. The nation has been polarized — to the accompaniment of a great emotional drain. Yet each pole has elements of the truth that the other will not allow itself to see.

This country is being held together by a thread of information: Ideas must flow freely, or blood will. No man, or group of men, has the right to censor another — *this is freedom.*

The Administration has neither condemned nor condoned the sign on the face of Millikan, though it appears to have cost the Institute more than one million dollars (due to gut-level reactions, of course). Further, the sign provoked controversy, and an interest in the state of the Union that is becoming too rare these days.

For better or worse, we feel that the posting of the sign was a Good Thing.

—Dennis L. Mallonee  
Eric H. Eichorn

## Libraries Sell Books

by Etaoin Schroedlu

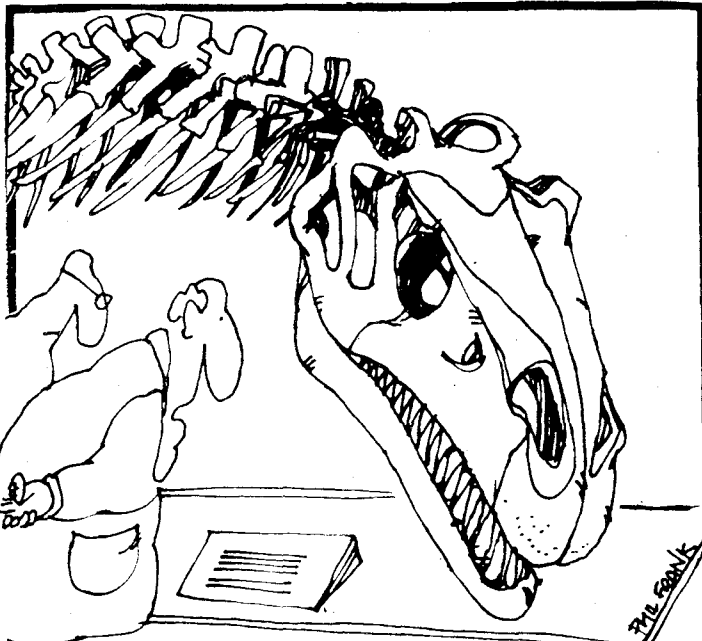
For all Techers looking for a good pre-finals punt, we recommend a couple of local Friends of the Library Book Sales, at the Altadena and South Pasadena Public Libraries. Transportation there is most conveniently done other than on foot, and both libraries are inconvenient enough to have their sales on the same day—May 19—but the prices are bargain-basement and this reporter has never failed to find something of interest. The paper-

back section always includes a great deal of s.f., mysteries, and other sorts of fiction to delight the hearts and souls of Techery.

To get to the Altadena Library, proceed north on Lake up the steep hill, and turn left on Mariposa. The South Pasadena Library is to be found south on Fair Oaks and west on El Centro. The sales are open by 9:00 a.m., early enough for even the most rabid s.f. fan, but don't be too late: these sales are well-attended. See you there.

The opinions expressed in all by-lined articles are solely those of the authors and do not necessarily represent the opinions of the editors or staff. Only signed editorials at the left of this page contain the editors' opinions. (The first signer of each editorial is its author.) The *Tech* welcomes letters but reserves the right to cut those over three hundred words if such cuts will preserve the original meaning of the letter.

**"FRANKLY SPEAKING"** by Phil Frank



"INTERESTING... THIS SKELETON WAS FOUND INTACT ON THE LOADING DOCK OF FOOD SERVICE!"

Post Office Box 1523 East Lansing, Michigan 48823

## Take Frosh To Lunch

by Philip Massey

Sign-up sheets for summer visits to incoming freshmen are out, and the BOD is desperately finding someone to be "in charge" (hand out keys, and be responsible) for the student garage, lest it be shut down in a week or so.

Most everybody will agree that he experienced a . . . , well, *shock* at arriving at Tech and meeting all those strange creatures, and finding things here perhaps more different than he could possibly have imagined (or so it would seem to me). To help ease this shock a little, and in order to have the incoming frosh's questions answered in part, ASCIT is again sponsoring its upperclassmen visits to frosh this summer. If you have any concern for such matters, and know your summer address (even roughly what city you'll be in, if you'll notify me later on as to your exact address), sign up on any of the lists, located in each House's lounge and on Flora's door in Winnett.

**I've Been Here Before**

A week from tomorrow there will be another class election. Due to the possibility that some people who thought their votes would be counted as no's actually had their votes counted as abstentions due to a misunderstanding on their parts as to how to vote no, the BOD moved to block approval of last Friday's elections. The election will simply be re-held, this time with explicit instructions on how to vote. The problem was due to many people writing "none" or "no way" as well as other statements that were negative in tone, but not unambiguous. Election Chairman Gavin Claypool felt that since it was impossible to draw a clear line (Does "Bite it, boys" constitute a "no" vote

Continued on Page Nine

# CALTECH FORUM

## CEAC

Since 1970 Caltech has sported a recycling center under the auspices of CEAC, an ASCIT organization. The center, in its third year, recycles about 5 tons of newspaper, 4 tons of glass, ¼ ton of aluminum, and 2 tons of computer cards and paper per month. The money from these operations has gone to pay debts incurred in the center's formation and upkeep, and to support programs and outings sponsored by CEAC.

Since January of this year I have been in charge of CEAC and have dictated the operation of the recycling center. During second term, the recycling center was regularly cleaned up and maintained through the help of a few hardworking individuals. However, we dedicated people, as all who were dedicated before us, have commitments that we must turn to; we cannot be expected to sacrifice a good portion of our time and energy to maintain the recycling center when we sense so little support and interest in the Caltech community.

The recycling center has been run by CEAC as an example to the Caltech and Pasadena communities of what can be done to preserve our natural resources through reuse of waste materials. This was meant to be only one function of CEAC, but the amount of time and energy needed to maintain it has all but curtailed other projects that CEAC might encourage (e.g. campouts, forest maintenance trips, concern with local and global environmental issues, etc.) and has at times nearly killed the recycling center itself.

The point is, people, that CEAC and recycling at Caltech depend on whole-hearted support from the Caltech community—students, faculty, and staff. The

Continued on Page Three

## Harassment

In the past few months, some Resident Associates and their families have been annoyed by anonymous phone calls in their apartments. Aside from being illegal, this practice violates the spirit of the system under which we live on campus.

Previously, when RA's were single, they could be treated much as any other student. The situation is different now; most RA's have families living on campus, and their privacy must not be violated.

The Resident Associates act as an interface between the Master of Student Houses' Office and the occupants of the student houses. In disputes between houses, complaints must be channeled from one RA to another, and in no case should the family of the RA be annoyed in retaliation for the boorish acts of their house members.

—Robert Palitz  
Lloyd House

**Dr. Thompson  
Elucidates REL**

Dr. Fred Thompson will speak on the REL System at the Information Science seminar next Wednesday (May 16) in room 74 Jorgensen at 4 p.m.

### The CALIFORNIA Tech

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**New Courses**

**137+138+139=129**

by Phil Neches

Course offerings next year in Information and Computer Science will be completely revamped, pending only final approval by the faculty. The largest change will be the elimination of IS 129, and its replacement by a three-course sequence, IS 137, IS 138, and IS 139.

IS 129, long the mainstay of Caltech's few software-related course offerings, has become something of a special topics course since the departure of Stephen Caine and the return of Howard Morgan to Cornell. IS 129 has been billed "Introduction to Programming Systems" in the catalog, and usually covered assemblers, compilers, loaders, and the like.

**Learn to Program**

Each course in the new sequence will be 12 units (distributed 3-3-6). IS 137, offered first term, will be on structured programming. IS 138 (second term) covers data structures and algorithms. IS 139 (third term) will be on multiprogramming and resource sharing, and should be essentially similar to IS 139 as taught this year under the title "Operating Systems." All three courses will be taught by Per Brinch Hansen.

IS 170, which has not been taught for a while, will disappear from the catalog. In its place will be IS 141, "Formal Models of Computation," to be taught first term by Dr. Ingargiola. The

course will cover such topics as Turing machines, recursive function theory, and automata.

**In a Laboratory**

A "Programming Laboratory" will debut under the guise of IS 140ab, offered second and third terms by Dr. Ingargiola. Enrollees will work on projects for two terms in small teams, making weekly progress reports to the class. The course will be 12 units (3-9-0), and the 9 lab units will count towards the unrestricted 9 unit lab requirement in Engineering.

The seminar course, IS 281, will disappear next year. A graduate-level reading course, IS 282 (6 or more units, Instructor: Hansen) will be offered more or less in its place. As we go to press, all indications are that the remaining IS courses will be offered as usual.

**Miss Nude World In Naked City**

Contestants for the Miss Nude World Contest and/or the Miss Nude America Contest will receive full travel expenses (at .05 dollar-mile<sup>-1</sup>) and a week's complimentary stay at Naked City, promoter Dick Drost has announced.

The annual contests will be held at Naked City, near Rose Lawn, Indiana. Contestants may be married or single, but must be between the ages of 16 and 29 (under 18 must have parental consent). First place for either contest is \$1000, with four runners-up prizes of \$50.00 each.

Entry blanks may be obtained from Naked City, Rose Lawn, Indiana 46372. The Miss Nude World will be crowned June 30; Miss Nude America, along with Mister Nude America, will be chosen on August 4.

**CEAC Meeting Tonight**

Continued from Page Two

recycling center cannot survive without a responsible effort by all parties to keep the center clean and well run, either through active participation in maintenance or through careful, responsible handling of recyclable materials by the center users (bundled newspapers, de-ringed bottles, crushed cans, separated materials). CEAC itself can be a vehicle for members of the community to learn or express their concern about important

environmental issues. But nothing can be done without you people, for CEAC cannot maintain a recycling center and an environmental conscience with only a handful of people.

There will be a meeting this Thursday evening, May 10, at 7:30 p.m. to discuss the future of CEAC and the recycling effort at Caltech. Do come if you are interested in or concerned about our environment.

-Brian Yandell

**800-1000 Optimum for Undergrad Student Body**

by Harold Brown  
President of Caltech

[Ed. Note: Last week *The California Tech* printed comments by Dr. D. R. Smith, Master of Student Houses, on the undergraduate student housing situation at Caltech. This week the *Tech* presents comments by Caltech President Harold Brown on the subject.]

I understand the desire to have comments and answers to questions on undergraduate housing from me. Before responding, I would like to note a general problem raised by giving my opinions at this stage. Many of these questions involve subjects that may - and often will - ultimately come to me as recommendations of various faculty or student groups or administrative officers, for decision. I am loath to take positions without first receiving the informed views and recommendations of others, because I do not want to bias future consideration and decision.

Regarding the particular questions you raise, I am already on record on some of them. For example, on the optimum size of the undergraduate student body, I have already stated my feeling that clearly undergraduate students are an important part of Caltech. Thus at one extreme, a size of zero would be a mistake. At the other extreme, if for no other reason, economic constraints dictate that we can't double or triple the present size. Between these extremes the choice involves a judgment,

weighing the effects of size on the quality of education for those who are admitted versus lost opportunity for those not admitted. My personal feelings would lean toward some very modest increase in undergraduate student body, perhaps to somewhere in the neighborhood between the present 800-odd first term registration and 1,000.

As to the optimum number of students in the Houses, additional housing, and how to make a selection if demand exceeds supply, I see no easy answer. I think Freshmen have a particular claim to places in Institute housing, and it seems to me that we must weigh carefully their special needs as well as the fact that future Freshmen classes have no voice in this present discussion. I hope we can provide, and think we should try to provide, a variety of housing possibilities embodying different living styles. We have made a modest start in this direction. I certainly think we should consider the possibility of using other Institute-owned houses or apartments if economically sensible arrangements can be made and if the necessary student leadership to take appropriate responsibility can be found. Both financial pressures and varying student interests are certainly going to have a strong influence on how these decisions are made. Despite all rumors to the contrary, the administration does not have a printing press for money in the basement; what it does have is more sinks than sources.

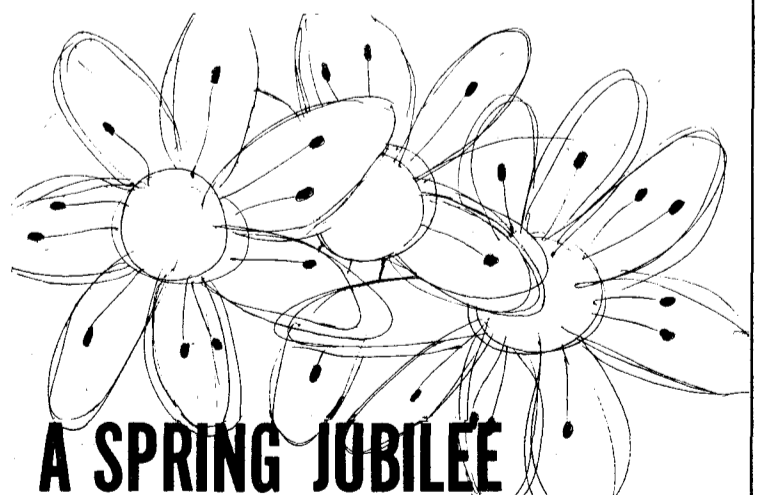
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# Profs Elected to Academy

Four California Institute of Technology faculty members have been elected to the National Academy of Sciences in recognition of their outstanding research, the academy announced in Washington, D.C.

They are Drs. Gerry Neugebauer, professor of physics and staff member of the Hale Observatories; Robert P. Sharp, professor of geology; Kip S. Thorne, professor of theoretical physics;

and Simon Ramo, research associate in electrical engineering, Caltech trustee, and vice chairman of the board and chairman of the executive committee of TRW, Inc.

They bring to 48 the number of Caltech faculty people who are members of the academy, giving Caltech the highest percentage of faculty membership in the NAS of any institution.

Dr. Neugebauer is recognized

as a leader in infrared astronomy, involving measuring the infrared (heat) radiated by planets, stars and galaxies. He was the principal investigator of infrared experiments on Mariners 6, 7, and 9, which mapped the heat radiation from Mars, and he directed the infrared measurements of the Mariner 2 exploration of Venus in 1962.

Dr. Sharp is credited with greater influence in two areas of

geological science than any other American—the observation and theory of glacier flow mechanics and the analysis of natural processes at work in the desert, particularly those involving sand dunes.

In his research on the nourishment, structure and mechanics of glacier flow, Dr. Sharp pioneered in using oxygen-isotope analysis to study glacial ice at various depths.

Dr. Thorne is recognized as the leading relativistic astrophysicist in the country. His field involves applications of relativity

### Soleri Representative To Talk On Arcosanti

Dan Barry, student of famed architect PALO SOLERI. (Palo Soleri was an apprentice to Frank Lloyd Wright) Dan lives at Arcosante, a community in Scottsdale Arizona, created by Soleri. Dan will be talking about current projects and other things going on at Arcosante. He will also be showing slides of Arcosante, Tuesday May 15, at a noon discussion in the Y Lounge.

**THE RIVET  
ARE COMING**

Continued on Page Ten

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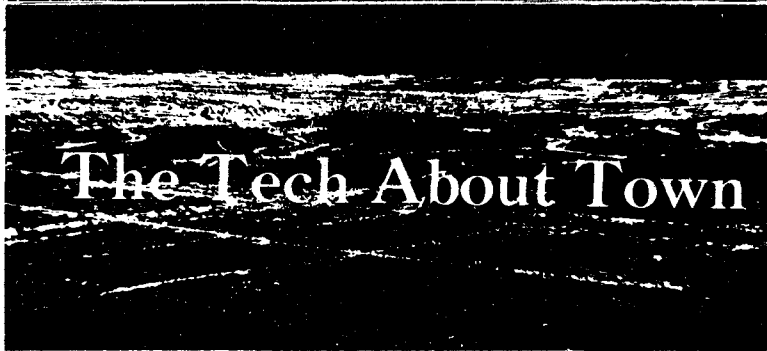


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# Graduating?





**by Peter Beckman**  
 With the coming of May and the (hopeful) end of the Southern California rainy season, the time has arrived for outdoor rock concerts. The biggest upcoming event in this area is, of course, "A Day on the Green" at the Ontario Speedway on May 27. This all-day event (8 a.m. to 5:30 p.m.) will star *The Grateful Dead*, *The Allman Brothers*, and *Waylon Jennings*. Tickets are available through Ticketron or mail order from Grateful Dead, 814 S. Westgate Ave., L.A., Ca. 90049.

Indoors offerings this weekend include *Alice Cooper* at the Inglewood Forum Friday night, and the following evening the group will play Swing Auditorium in San Berdoo. *Loggins and Messina* with *Argent* will appear at the Anaheim Convention

Center Saturday evening, while twenty miles away *Leon Russel* will be performing at the Long Beach Arena. But you can still see both since Russel will repeat his concert the following night.

The Santa Monica Civic Auditorium will be the scene of a *Paul Simon* concert May 19. The first performance will be at 8 p.m., and a second show has just been scheduled for 11. May 26, *Procol Harum* will be at the Anaheim Convention Center, and the following evening *Lee Michaels* will perform at the Long Beach Auditorium.

**Theatre**

On stage the Music Center currently has two fine offerings. The L.A. Civic Light Opera is producing *Oliver*, at the Pavilion while the Ahmanson Theater is the site of Joseph Papp's

Continued on Page Nine

**The Critical Stomach**

by PMN/MRM/EAS  
 Tech Food Editors

Recently your (elder) Tech trio tried the new restaurant, the Sawmill by name, on Lake Avenue south of Del Mar. We were early, business was slow, service was quick (and good). Prices are beyond the range of most Tech students — \$5-\$7 for dinner — and the quality equally beyond what Techers are used to. The bill of fare included several sorts of meat and fish, though it was primarily dependent upon steak. The varied main courses sampled by your reviewers were pronounced excellent, and ample. There was also a help-yourself, infinite-seconds salad bar, with many different dressing, spices, and other toppers. The wine list was adequately extensive and satisfactory. The decor was interesting.

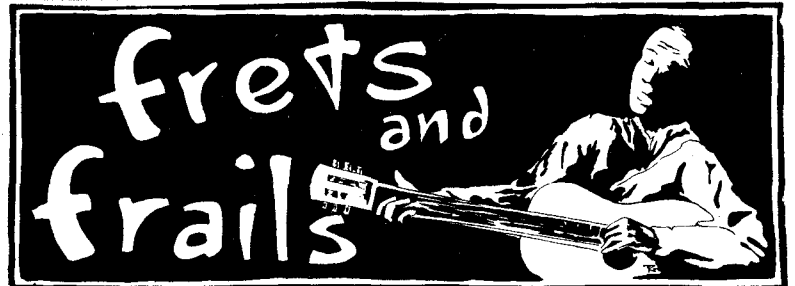
That's The Sawmill, at the sign of the rough-hewn exterior.

**Kevels on Watergate**

Dr. Dan Kevels, Professor of History at Caltech will lead a discussion on Watergate, Civil Liberties, and Presidential Power. Dr. Kevels was a former White House Aide under Lyndon Johnson. Kevels will speak in Winnett Lounge Wednesday, May 16, at 7:30 p.m.

**Retraction**

In last week's *Tech*, in the article titled "Throop Site Decision Imminent," Hema Weisblat was referred to as "the Blacker RA's wife." Ms. Weisblat should have been referred to as one of the Blacker RA's. It should be noted that she is a registered architect.



Following a top-notch act has always been considered difficult, but there is something that may be harder: being the act preceding a star. The Ice House was packed with people who came for one thing: to see Mason Williams. Paul Arnoldi had the unenviable task of warming up the crowd, and succeeded quite well.

Paul Arnoldi is a guitarist and singer, as well as a writer of songs. His songs included some standards, "Early Morning Rain," "City of New Orleans," and others, as well as the pure bluegrass "Cripple Creek." There were also a few good original

songs, such as "Long-Stemmed Rose," and in general Paul Arnoldi's music was very listenable. I would really like to hear him in a return engagement, without the shadow of Mason Williams looming in the wings, and with a less-strange audience. His music was good and I think it is going to get better.

Mason Williams has found himself a really impressive backup group, if you can really call them that. Actually, Mason Williams is part of an excellent group calling itself the Santa Fe Recital. M.W. is the guitarist, and the other instruments include a Fender bass, drums, cello, and either banjo or fiddle. Their music includes things written by Mason Williams, country-western standards, and the best parts of bluegrass. If they had identified more of the songs, I could even tell you what they played. (Actually, from a total of two complete shows, I gleaned a total of eleven song titles.) Their version of "Foggy Mountain Breakdown" was especially good, as well as "Steve's Jig," sort of an Appalachian version of a highland fling. There was also, of course, the obligatory encore of "Classical Gas," which required Mason Williams to sit there playing while the rest of the group stood around. Such is fame.

If you get the chance, you should go and see this show, just to see how a cello and an electric bass fit into a country format. I was surprised, especially by the cello, and the result is much better than the random garbage normally called country music. The Santa Fe Recital is great, and I hope they come back this way often.

—Nick Smith

**Car Project**

Continued from Page One

contents of gasoline and propane) is about 10%.

The Clean Air Car Project is run by undergraduate students (present manager: Bob Cowan). Other CACP members on the Rallye were students Janet Wainwright and Gary Rubenstein, and EQL staffers John Batchelder and James Henry. The CACP has an office in 03 Guggenheim (x 2694), and always welcomes new members. Among other things, Summer jobs are available. If you have read this far and are still awake, drop by the CACP office any afternoon for further info.

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During the non-snow off season the U.S. Women's Alpine Ski Team members go on the "Ski Team" diet to lose 20 pounds in two weeks. That's right — 20 pounds in 14 days! The basis of the diet is chemical food action and was devised by a famous Colorado physician especially for the U.S. Ski Team. Normal energy is maintained (very important!) while reducing. You keep "full" — no starvation — because the diet is designed that way! It's a diet that is easy to follow whether you work, travel or stay at home.

This is, honestly, a fantastically successful diet. If it weren't, the U.S. Women's Ski Team wouldn't be permitted to use it! Right? So, give yourself the same break the U.S. Ski Team gets. Lose weight the scientific, proven way. Even if you've tried all the other diets, you owe it to yourself to try the U.S. Women's Ski Team Diet. That is, if you really do want to lose 20 pounds in two weeks. Order today. Tear this out as a reminder.

Send only \$2.00 (\$2.25 for Rush Services) — cash is O.K. — to Information Sources, P.O. Box 4302, Dept. ST, Mt. View, Calif. 94040. Don't order unless you expect to lose 20 pounds in two weeks! Because that's what the Ski Team Diet will do!

**SILVER SCREENING**

by Etaoin Schroedlu

Well, there you are, J. Random Techer, several years out of college, working for a computer firm in a large American city, and your life is a big bore. You hate your job; your wife, an actress (but a very bush-league one), has walked out on you because you're so boring; and you're totally fed up with your old lifestyle. So what do you do? You quit your job, and start snaking up on such subjects dear to the hearts of Techery as lockpicking, illegal entry, unlawful use of computers, and skulking about, preparatory to entering into a Life of Crime.

A few awkward things happen to you along the way, but by and large things work out very well, especially when you branch out into blackmail, using weapons you happen to find in the course of your jewel thievery. You meet a girl that one of your blackmail victims tells you has a lot in common with you (Jacqueline Bisset), and shack up with

her. When you leave a chess piece behind after a robbery, the Press tabs you 'The Chess Burgler,' and the police talk the local newspaper's chess editor into challenging you to a game, one move per burglary, so you illicitly program an off-duty computer (after all, somebody at MIT figured out how to do it) to play chess and beat him (but he's a toad, so that's OK). Finally you steal a \$6M diamond and make a monkey out of poor old Dave, the middle-aged insurance investigator who has caught on that you're the Chess Burgler but can't prove it (despite fingerprints and semi-infinite direct witnesses, and a small bullet hole in you).

It's all there, in *The Thief Who Came To Dinner*, with Ryan O'Neal as the thief all Techers would identify with, which just finished a run at the Academy Theatre. It seems likely to come back sometime soon, and is funny enough to be worth

Continued on Page Nine

# Where are the bikeways?

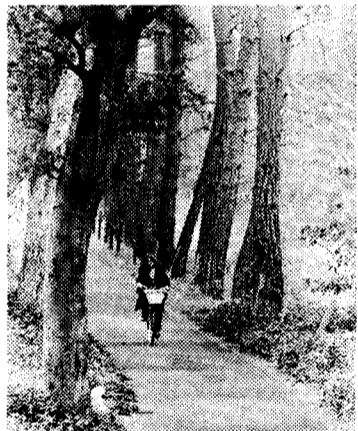


Photo by Jack Wilson

You've probably heard a lot about today's bicycle boom and the many advantages bicycling offers. It is clean, quiet, inexpensive, energy-efficient, healthful—and fun. You might say the bicycle is one of the world's greatest inventions!

However, there is one big, sobering drawback: Bicycling in North America today simply isn't safe! An estimated 900 bicycle riders will be killed and more than 40,000 injured in bike-auto accidents this year alone in the United States. Most of these accidents could be avoided with adequate bikeways—separate pathways just for bicycles and safe routes in conjunction with roads.

But: *Where are the bikeways?* This country's 80 million cyclists have only 16,000 miles of bikeways, or about 13 inches for each bike rider! Compare that with the 3 million miles of paved roads available to 90 million motorists. And most of the existing bikeways are far from ideal. Instead of protective curbing to separate bikes from autos, you usually find just white lines or signs along the road's edge, which do little more than lull both cyclists and motorists into a false sense of security.

### Who is holding things up?

Why aren't our millions of bicycle-riding taxpayers provided with better, safer facilities? Because most government bodies continue to pump our money into still more roads, highways, and freeways. Their actions make us even more dependent on automobiles, which results in more smog, noise, and traffic congestion—not to mention depletion of the world's natural resources.

And what about the citizens who must rely on alternate transportation? Half of our nation's adults do without the automobile, by need or by choice. Yet no major bikeway, bus or rail transit funds have been made available, and proposals fall ridiculously short of the real needs. The problem is further compounded by the fact that attempts to solve our transportation dilemma with gas tax funds continue to meet vehement opposition from powerful road and highway lobbies.

### What could a bicycle community be like?

Here's a practical, viable alternative. Well-defined bikeways, separated from cars, radiate from residential neighborhoods to schools. On-street car parking gives way to protected bikeways on key thoroughfares. Bicycle storage facilities are located throughout the city. Commuters bicycle to public transportation stations, store their vehicles, and continue by bus or rail into commercial sectors of the city. Buses going into the countryside have racks to hold bicycles. Adequate bus and rail facilities play a key role, especially during bad weather. That's what we could have!

### Friends For Bikeology is trying to help

Friends For Bikeology has been working two years for more and safer bikeways. We sponsored National Bikeology Week in May 1972, involving thousands of people in more than 70 cities throughout the nation. This activity served to publicize our ideas and goals and to win the support of many legislators and planners.

We have two main objectives. First, to see that bicycle, bus, and rail transportation receive an equitable share of public funds. In 1972, \$22 billion of our gasoline and property taxes were spent in the United States for roads and highways, while less than one billion went for public transportation. And practically nothing was provided for bikeways! We must convince

# New Women's Chorus To Highlight Concert

by Marc Donner

Those of you who had the pleasure of attending the Festival of Light presented last December by the Glee Club will be delighted to know (as if you didn't already) that there will be two performances this week in Beckman Auditorium. This year's theme will be the successful concert tour last summer of Yugoslavia, Austria, and Germany and will feature color slides of the trip and six Yugoslavian songs arranged by the club's Director, Olaf Frodsham. Shirley Marneus (whom we know also as the director of the Spectrum Productions) will narrate.

The new Women's glee club, under the direction of Mrs. Monica Roegler, will perform in Home Concert for the first time. The women will sing separately and in numbers by the mixed Chamber singers.

This concert will be recorded and the albums will go on sale in June. Tickets are \$2 at the Ticket Office or the door, but a Tech I.D. will get you a free one (or two).

Next Monday Night, May 14, the final lecture of the 1972-3

Watson Lecture Series will be presented in Beckman Auditorium. Dr. Leroy Hood will speak on the "The ABC of Cancer." Professor Hood is studying how immune systems work; the genetic origin of specialized cells that produce antibodies, and how those antibodies protect the body from foreign cells and proteins.

Dr. Hood received his BS and PhD degrees at Caltech in 1960 and 1967, with an interlude at Johns Hopkins School of Medicine from which he received an MD in 1964. Before joining the faculty of his alma mater he did research in immunology at the National Institutes of Health.

## The Underground Ear

### The Jefferson Airplane

.....Up Against the Wall

This is a recording of concert broadcasts, at least partially from a television special. Much of the material is familiar ("Volunteers," "We Can Be Together," "Wooden Ships," "Plastic Fantastic Lover," "Somebody to Love") but this album includes some new versions and a couple of songs that didn't get much air play ("Mexico," "Emergency," and others). The performances by the members of the Airplane are far from perfect, especially the vocals, but the instrumental work is good.

Recording quality: good. Musical quality: good. Historical value: limited. Overall rating: B.

### Buffalo Springfield

.....Bluebird Roots

This is an odd mixture of live and studio cuts by the Springfield; Poco; Neil Young; and Crosby, Stills, Nash, and the aforementioned Young. The idea apparently was to show the development of the different parts of the music stemming from the original group. It suffers from poor recording quality on some of the cuts. This album does, however, have good points. The ten-minute version of "Bluebird" is nice, even though not well recorded. With the exception of two Poco cuts, the music is from live performances, and has hiss from the recording equipment, as well as lack of bass in spots. This one is worthwhile if you are a genuine Buffalo Springfield fan. Otherwise don't bother.

Recording quality: fair. Musical quality: good. Historical value: none except for Bluebird. Overall rating: C.

### The Beatles

Renaissance Minstrels, Volume I

This is the Early Beatles, live. "Twist and Shout," "Please Please Me," "She Loves You," and lots of others are there. Unfortunately, so are millions of screaming Beatle fans. Live Beatle concerts were noisy at best, unlistenable at worst. This one approaches the latter state. If you ignore the tape hiss on

Spectrum Production 4 is coming up soon. Troilus and Criseyde, starring Michael Dunnagan as Troilus, Susan Burke as Criseyde, Lionel Levy as Pandarus, and Terry Kovac as Diomedes.

This is an English translation (modern English that is) of Chaucer's original poem, which has been cut down to performance length for this production. There will also be a selection of Fifteenth-century songs sung by David Willman, Steve Aley, J. Kelley Beatty, and Bill Derrick.

There will be four performances, two Thursdays and two Saturdays May 17th and 24th and 19th and 26th respectively. The performances will be in Baxter lecture hall at 8:00 p.m. with tickets sold at the door. Two dollars general admission and \$1 for students.

the recording, you can close your eyes, and imagine yourself surrounded by 50,000 teeny boppers who have begged, borrowed, stolen, baby-sat, or sold their nubile little bodies in order to obtain enough money to actually see the Beatles, and maybe, just maybe, get close enough to the stage to be blinded by the glare of Paul's bass.

Nine years have passed, the Beatles are in their thirties, and the teeny boppers are mostly married now to men who are not the Beatles, but are better than nothing, and who never understand why their wives get wistful looks when certain songs come on the radio. Such is life.

Recording quality: poor. Musical quality: The Beatles. Historical value: of course. Overall rating: D for anyone but a dedicated fan.

—Nick Smith

## Egyptian Fertility Pop. Seminar Topic

by E. Schroedlu

Dr. Laila Shukry El-Hamamsy, a visiting Research Associate with Caltech's Population Program, will give a seminar today on "Fertility and Related Attitudes in an Egyptian Rural Community." The seminar will be held in 127 Baxter at 4:00 p.m.

Dr. El-Hamamsy is the Director of the Social Research Center and Professor of Anthropology and Social Research at the American University in Cairo, Egypt, and will remain at Caltech for the next few months. She has received academic degrees from the American University in Cairo, Bryn Mawr, and Cornell University, and has served as a consultant to UNICEF for the evaluation of community development programs in Tanzania and Tunisia. She is currently the chief investigator of a population research program in the Republic of Egypt. Dr. El-Hamamsy is an outstanding scholar in the field of population, and a major contributor on Egypt for the new edition of the Encyclopedia Britannica.

### How you can help Bikeology help you


We can help bring about needed changes that will benefit everyone.

Bike rider or not, if you are interested in a safer, more sensible transportation system, please send us a contribution of \$5 or more. You can also help by writing your local, state and federal representatives, asking them what they are doing to support bicycling and public transportation facilities.

As a Bikeology supporter, you will receive a copy of our poster-style newsletter, "Serendipity"—a mosaic of bike-related items.

Please mail the coupon and your check for \$5 or more to help Friends For Bikeology continue this important work. Thank you.

*K. Kolsbun*  
KEN KOLSBUN, Executive Director



Friends For Bikeology  
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I am enclosing my contribution of \$5 or more to help Friends For Bikeology in their endeavor to obtain sound transportation including more and safer bikeways.

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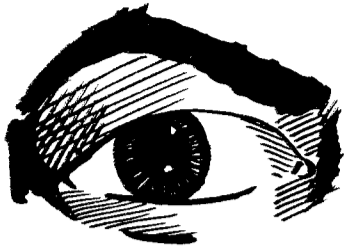
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# The Critical Eye

by Thumper

Tiajuanatomia might have appropriately substituted the title Pandemonium as the "Art Department" scurried around hell-bent for election trying to put together a show in seven hours that was meant to be put together in 4 days (Note: time allotted for setting up art exhibits in the first place is never adequate). If you showed up for the opening Friday night you might never have known save for the lopsided hung paintings (that might have swayed by a tremor of some dimension) or missing tags on works, or dates of 1972. But who ever looks beyond the drinks at an opening anyway. Quite frankly Sally Shapiro got together the impossible and I think we ought to be appreciative of small talents to go with the "known" talents.

Two names will remain in the mind most prominently, as they did the majority of the work in the show, Benjamin Serrano and Danielle Gallois. Danielle Gallois, wife of Serrano was born and brought up in France, unlike her fellow artists in this exhibit, but the influence of the Mexican culture has made

definite impact in her work. As well as dabbling in the silver crafts she has worked in some tiny water colors and ink drawings, small paintings and fantastic tapestries which she designed and which were woven in Oaxaca. (If you know anything about tapestries you will really appreciate the work and definition found in these, and if that girl really did all the work in Baxter last year, she's got a hell of a lot of motivation.

### Men fall Behind

Benjamin Serrano, the second of the two most prolific exhibitors, deals with exotic sculptures made up of boxes dealing with the human form and the religious symbolism. In keeping with the culture of Mexico the sculptures are dressed in almost clashing colors and the construction is kept in a hand-made appearance (highly contrasting to the last sculptor at Baxter Art Gallery, Max Finkelstein). No attempt is made at concealing the method of construction or at refining a technique to match technical standards of the 20th century American sculptors.

Guillermo Mellado has stepped

out of the rendering syndrome into a much more finished technique however, still keeping the bright and vibrant color scheme of his fellows. If you look closely at these angular and lightly defined pieces you may find again the ever-present religious overtones.

Juan Badia has two very fine pieces in this exhibit if you didn't get to see his work in the popular *Surrealism is Alive and Well in the West* show. Extreme Christian influence pervades in a very intricate acrylic rendering, very suggestive of the role religion plays in the Mexican culture. Those extremely meticulous multi-media looking, finely designed images bracketed under acrylic frames with the less common (among artists as a

whole) circular motif as well as circular perimeter belong to Felipe Almada.

### God and Sex

My favorite of these is Gallois (two of a kind). Within all her work lays a great deal of symbolism in grotesque shaped limbs on characters abundantly and uniquely clothed. You will notice these are also mounted a bit crooked in the frame, but if you will notice, the paper also does not have straight edges, which in my opinion is in keeping with the form within and again the hand-made approach.

Gallois has a fetish about the limbs and parts of the body. Are these pornographic? If so is it not sacrilegious to find this in the same context as the pronounced Christian symbolism?

No, I actually do not think Gallois is exploiting the body, but exploring the avenues of the interests of her now established culture. The color schemes are very much in keeping with the traditional art of this culture, but the ideas therein are far from the 20th Century ideal dominance.

To catch up on some of the culture of the Mexicans you might want to read *The Children of Sanchez, Five Families*, or *A Death in the Family*. I think that a basic historical knowledge of what is going on in this culture is important to be able to appreciate what one might believe is a sadistic exploitation of sex and God, which in my opinion is far from what is being presented here.

In order to better serve the growing number of bicycle enthusiasts in this Southern California area, this newspaper, in cooperation with the Los Angeles City Engineer's Office and the Institute of Traffic Engineers, invite your participation in the following bicycle distribution and travel characteristic study. The data gathered in this study will aid various State, County, and Municipal agencies in the planning and design of bicycle facilities and safety programs. Please fill in the following questionnaire for your entire family and mail it to: Bikeway Study, Suite 700, Los Angeles City Hall East, 200 No. Main Street, Los Angeles, California 90012. Please *do not* fill out more than one form. Thank you for your assistance and cooperation.



### BICYCLE DATA FORM



ZIP CODE OF RESIDENCE LOCATION.....

NUMBER OF PERSONS IN HOUSEHOLD.....

NUMBER OF BICYCLES IN HOUSEHOLD.....

NUMBER OF CARS IN HOUSEHOLD.....

Complete a separate column for each bicycle rider in your family by filling in the boxes with the requested information or by placing an "X" in the appropriate box.

BIKE RIDERS IN FAMILY		1	2	3	4	5	6	7
AGES OF BIKE RIDERS:								
ESTIMATED NUMBER OF BIKE TRIPS PER WEEK:								
AVERAGE LENGTH OF BIKE TRIP IN MILES:								
USUAL DESTINATION BY BICYCLE:	PARK							
	SCHOOL							
	SHOPPING							
	WORK							
	BEACH							
	NO DESTINATION OTHER							
BIKE RIDDEN AFTER DARK?	NEVER							
	SOMETIMES							
	FREQUENTLY							
BIKE USED PRIMARILY ON:	WEEKDAYS							
	WEEKENDS							
BIKE USED PRIMARILY FOR:	RECREATION							
	TRANSPORTATION							
WHILE RIDING YOUR BIKE, HAVE YOU BEEN IN AN ACCIDENT WITH A MOTOR VEHICLE IN THE LAST YEAR?	YES <small>reported</small>							
	NO <small>not reported</small>							
IS YOUR BIKE LICENSED?	YES							
	NO							
HAVE YOU RENTED A BIKE LOCALLY IN THE LAST YEAR?	YES							
	NO							
MAJOR ACTIVITY OR OCCUPATION OF EACH BIKE RIDER:	STUDENT							
	LABORER							
	OFFICE WORKER							
	CRAFTSMAN							
	HOUSEWIFE							
	PROFESSIONAL OTHER							
ESTIMATED FAMILY INCOME:	\$0-4,999							
	\$5,000-9,999							
	\$10,000-14,999							
	\$15,000-19,999							
	\$20,000-24,999 over \$25,000							

PLEASE ATTACH ANY COMMENTS ON A SEPARATE SHEET OF PAPER

## Get Away From It All

by Jane Turczyn

Welcome to the *Information Exchange* Travel Column series. This is the first of several columns telling you about fun places to visit and good things to do.

You'll vicariously get into life in Russia, Africa, Asia, South America. You'll hear about exotic but reachable places like Monaco, the Canary Islands, India, and Morocco. Then there are columns about things closer to home, like hitchhiking and motorcycling in the U.S. and vagabonding in Canada and Mexico.

Authors Randy Mink, Mik Schultz, Tom Grimm and Ed Buryn will tell you a bit about how to get to these places and what to expect there. And they ought to know. Mik wrote "Asia for the Hitchhiker" and the soon-to-be-published "Mexico and South America for the Hitchhiker." Ed's the author of "Vagabonding in Europe and North Africa" and "Vagabonding in America." Tom Grimm's "Hitchhiker's Handbook" tells it all. These guys have been there and back... and loved it, as you'll see from the articles.

If you're thinking right now, "I haven't got the money or the time to travel," think again. The world is full of opportunities for traveling cheaply.

Reading these columns hopefully will get you in the mood for charting your own course. But one newspaper story can say only so much; it can't begin to hit the nitty-gritty details you need before navigating even begins.

In addition to this column, therefore, many students this spring will be consulting something called a *Euro-Kit*. It's 12 folders that give you the latest lowdown on passports, visas, shots, insurance, planes, trains, cars, boats, hostels, hitchhiking, tours, safaris, camping, bicycles, and motorcycles.

Some people say you can make it on \$5 a day, but you can live on \$1 or \$20 depending on how fussy you are. The Euro-Kit tells you the alternatives in a straightforward manner; then you decide the traveling style best for you.

Thus, Information Exchange has prepared both the travel columns and the Euro-Kit because there seems to be an information gap between opportunities available and students knowing about them. The non-profit organization, as its name implies, exchanges information.

To answer even more questions on student travel. Information Exchange has a list of more than 60 books and maps. The book folder and entire Euro-Kit are available for \$1 from Information Exchange, Dept. TT, 22 West Monroe Street, Chicago, Illinois 60603, or just send a self-addressed stamped envelope for the book list alone.

Editor's Note: All books mentioned in the Travel Tips columns are available from Information Exchange. Send your book order with your check for the total amount, plus 25 cents for postage and handling for each book to the address above. Allow about three weeks for delivery.

## Corporate Meeting Today

## Resolutions to be Discussed

by Mark Johnson

Organizationally ASCIT acts as a dispersing device for student dues. We approve lists of people going to Catalina; we approve lists of representatives to faculty committees; we give endorsement to clubs; we manage certain student services. The current Board of Directors would like to change that role. We would like to continue the already mentioned activities, but we would like to do more.

The proposals before us today represent that desire. We would like to see student proposals well presented in Faculty committees. We would like to see student desires and priorities effectively presented to the Administration. We believe ASCIT should be an effective student lobby. Four of the resolutions today speak directly to that point.

Resolution IV represents the belief that ASCIT members should get a larger financial return on their investment.

We believe that these Resolutions offer an opportunity for the student body to express their

opinion on matters of significant importance to us all.

Following are five resolutions drawn up by the Ad Hoc Committee on the Corporation Meeting:

**Resolution I: INSTITUTE REQUIREMENTS**

We the members of the Associated Students of the California Institute of Technology

Request that all undergraduate students taking Ma 2abc and Ph 2abc to meet Institute academic requirements to be allowed to take those courses on a Pass-Fail basis.

**Resolution II: PARENTAL SOLICITATION**

We the members of the Associated Students of the California Institute of Technology

Are opposed to the solicitation of funds from our parents for the purpose of purchasing additional computer time.

**Resolution III: OPTIMUM SIZE OF FRESHMAN CLASS**

We the members of the Associated Students of the Cali-

fornia Institute of Technology

Request that the size of the entering freshman class be reduced to approximately 200, to be no more than 205 nor less than 195 in any particular year, beginning with the Class of 1978.

**Resolution IV: ASCIT INCOME**

We the members of the Associated Students of the California Institute of Technology

Request the ASCIT Board of Directors to find sources of income for ASCIT in addition to member dues.

**Resolution V: GRADES AND TRANSCRIPTS**

We the members of the Associated Students of the California Institute of Technology

Believing that the transcript should be a record of a student's areas of proficiency rather than an account of failure and success,

Request that the grade "F" for undergraduates be eliminated and that no credit or notation on the transcript be given for courses in which a student fails to meet the minimum requirement for passing.

by John Land

One of the major topics of discussion for the ASCIT corporation meeting today are the possible alternatives to the present A-B-C-D-F and P/F grading systems. Several plans have been discussed by the ad hoc Agenda Committee, and, after presentation here and at the corporation meeting, student opinion concerning them will be solicited so that a proposal backed by a large number of students can be submitted to the Academic Policies Committee and the Undergraduate Standards and Honors Committee. Hopefully, action by these committees and by the Faculty Board this June can institute a change in the grading system for next year.

**Pass - No Credit**

The least change in the present grading system suggested is to alter Pass/Fail to Pass/No credit and expand its use. Applicable to both freshmen and upperclassmen, this system would not record a failure or the course failed on one's transcript, but would still force a student to make up any units of Institute or option requirements not passed. A very basic reason for this change from an upperclassman's view is that an F in a P/F course is included in calculating G.P.A.'s. No one plans to fail a P/F course; a major reason for taking a class P/F is its (supposed) lack of effect on G.P.A.

**Before I Go . . .**

A word about F's on transcripts in general. Last summer, Norris Kreuger did a study for ASCIT on academic Reform. In the replies from grad schools and industry, it was about 50-50 whether they desired F's recorded or not. However, most said that if Caltech replaced "F" by "NC," that they could adjust their procedures. Also in the report was the general disapproval of taking many courses P/F or P/NC, especially in one's option. However, I believe that the option should be given to students between widely applied P/NC, and a letter-graded system (such as Stanford currently does), with fair warning about P/NC and grad school and employment chances. Students can then elect the combination of grades and P/NC that suits them, and worry about their own futures.

**Plan #2**

The second alternative to the

present system is to allow an unlimited number of courses to be taken under one of two grading options: P/NC (the same system as above), and A-B-C-D-NC.

Arguments Pro A-B-C-D-NC: It allows an instructor to make a failing student take the course over again (if required), without attacking the public (as in transcript) stigma of an F. The penalty for failure then becomes a matter of the extra time needed to fulfill graduation requirements, rather than public exposure and the time. The retention of the grade "D" allows an instructor to pass the marginal student, indicating that the student has attained some minimum level of achievement.

Arguments Con: Other than the general objections of NC as "academic dishonesty" or "an attempt to hide failures that might indicate a tendency to fail later," the major objection to this system is the grade "D." The "D" under any system is highly ambiguous, and is used most often as a charity grade by instructors not wishing to fail a student outright. While big-hearted, this is a far greater case of academic dishonesty than the grade "NC" could possibly be.

**Alternative #3**

The third plan is an unlimited choice of courses taken either P/NC, or A-B-C-NC. The main advantages of dropping the grade "D" are elimination of charity grades, and raising the academic standards of the student body. Since no stigma is attached to "NC," an instructor can give it without pangs of conscience if a student cannot maintain at least a "C," (the achievement level of a "C" to remain the same as now - C- to C+). It may be argued that eliminating "D's" cheats some students of the chance to pass, even though at a low level. However, anyone here should be able to get at least a C- in most courses, and possibly *should* repeat a course in which they can't.

As for acceptance of "NC" by the outside world, in addition to Krueger's report, there is Stanford's experience. On A-B-C-NC and P/NC since Fall of 1970, its graduating senior have apparently had no more trouble in this respect than under the old system.

**. . . A Blender, Anything!**

Any of these three alternatives are better than the present system. No real reason exists for recording failures, as most of the outside world (two examples are IBM and USC School of Medicine) will accept a Caltech graduate on what he has accomplished. Allowing students to take courses under one of these systems relieves much of the pressure on Teachers, and they allow a student to orient his education towards his own goals, whether grad school, business, or anything else he conceives as desirable.

## Parental Solicitation For PDP-10

by Robert Fisher

During the course of the past year a group called the Parents' Fund has been soliciting money from our parents, ostensibly for providing each Caltech undergraduate with one additional hour of time on the PDP-10. This drive has been headed by a parent of a Caltech student, and was originally created at the request of the Development Office. To date about \$7000 has been collected, of which \$2000 is designated specifically for this computer time. In addition Caltech will match the parents' donations.

Several objections have been raised to this campaign. On the lowest level, some students have objected to their parents being solicited for a cause which they, the students, are not interested in. Secondly, there are many avenues for getting computer time above the \$50 Institute allowance. This includes going through courses and departments. Thirdly, the solicitation is being made for \$25 per student (\$20,000), whereas the computing center estimated that PDP-10 time costs an average of \$8.50 per hour of console time. Lastly, one can question the necessity

for soliciting money, at all, when the Institute owns the PDP-10 (currently, it's being paid for) and in addition it is drastically underutilized. There are, however, financial considerations to be accounted for before any additional free time can be released. Lastly, some students object to their parents being solicited for any reason.

Basically, we have two issues at stake: the first is the problem of computer time. I do not feel that this is a critical point, rather the crucial issue is the solicitation of money in the students' names without taking student interests into account.

The following alternatives to this situation are offered for discussion: 1. No solicitation from our parents. 2. No solicitation from parents in our names. 3. Solicitation into the Caltech general fund. 4. Leave matters as they are now, i.e. the Institute decides upon projects to solicit for. 5. Solicit in students' names for student proposals. 6. Make a list of items of student interest and have the Institute choose one for solicitation.

## Summer Jobs in Chemistry

Seven college students will have an unusual opportunity this Summer to participate in chemical research at California State University, Los Angeles, under auspices of a grant from the National Science Foundation.

Undergraduate science students attending a community college or four-year college or university in the Los Angeles area are eligible.

The seven students selected will actively participate in chemical research this Summer under

the direct supervision of Cal State L.A. chemistry members. Each will receive a stipend of \$80 per week. Laboratory expenses encountered in the research will be covered by the NSF grant.

Dr. Costello Brown, Associate Professor of Chemistry, said that application forms from interested students must be submitted by May 15. They can be obtained by contacting the Department of Chemistry at Cal State L.A. at (213) 224-3613.

## AGENDA

## I. Opening Remarks

Mark Johnson, President 4:00 - 4:05

## II. Old Business

## A. Food Service

James Battey 4:05 - 4:20

## B. Institute Requirements (Resolution I)

Robert Coleman 4:20 - 4:35

## III. New Business

## A. Parental Solicitation (Resolution II)

Robert Fisher 4:35 - 4:50

## B. Safety and Crime

David Drake 4:50 - 5:00

## C. Optimum Size of Freshman Class (Resolution III)

Bryan Jack 5:00 - 5:15

## D. ASCIT Income (Resolution IV)

Mark Johnson 5:15 - 5:30

## E. Grades and Transcripts (Resolution V)

John Land 5:30 - 5:45

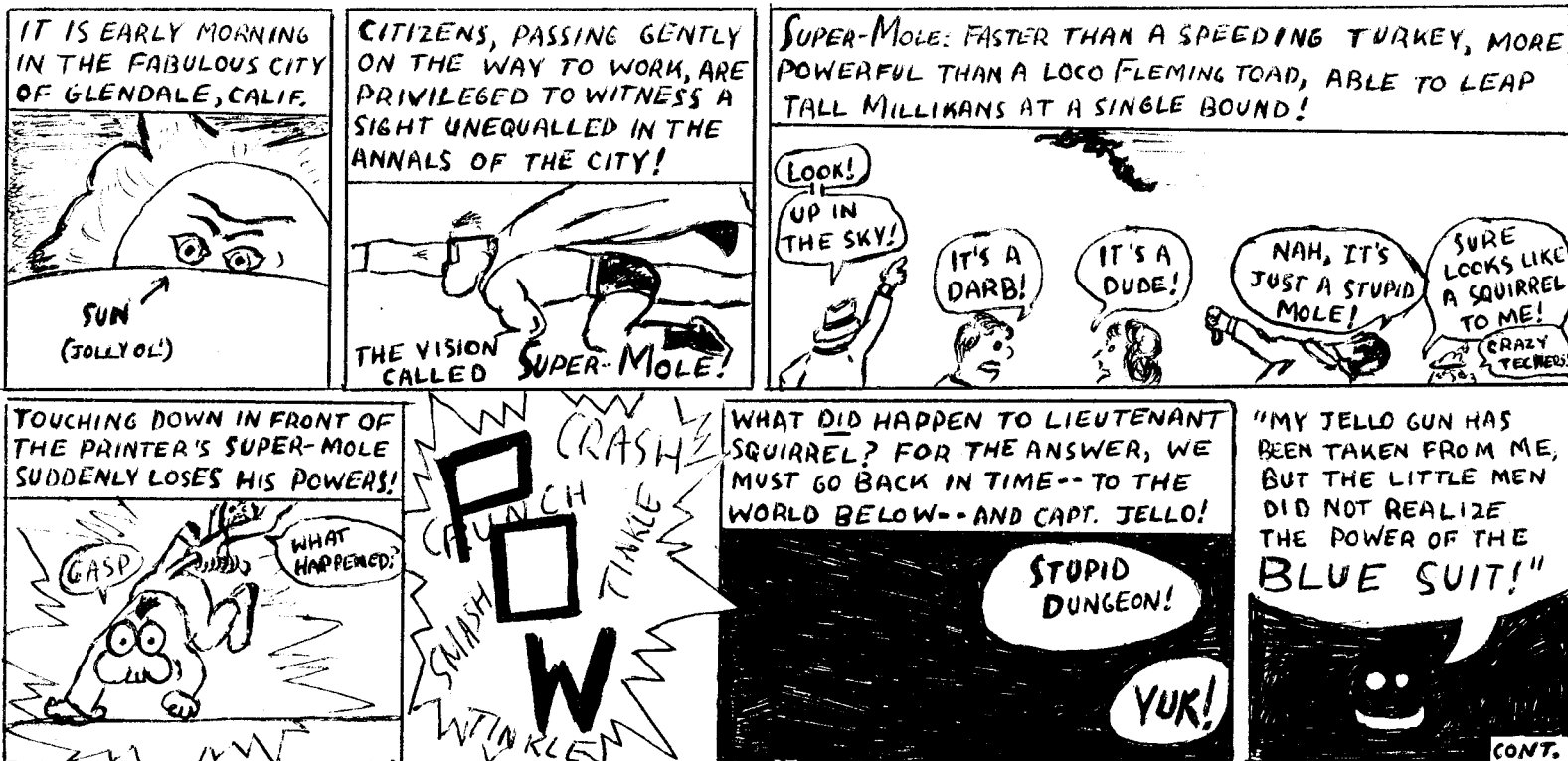
## IV. New Business From the Floor

Chaired by Mark Johnson 5:45 - 6:00



THE ADVENTURES of the TECH TRIO

by H. Wink & D. O'Malley



Ward Finds 120,000-Year Martian Precession

The spin axis of Mars oscillates up and down markedly over spans of 120,000 years, causing large-scale changes in the atmosphere, in the opinion of Dr. William Ward, research fellow in planetary science. The equatorial plane of Mars, which at present is inclined some 25 degrees to the plane of the planet's orbital motion, at times has been tilted by as much as 35 degrees and then some 60,000 years later, as little as 15 degrees.

This tilting exposes the poles to greater and lesser amounts of sunlight, and consequently causes climatic changes, he said.

Dr. Ward has also found that the magnitude of the 120,000-year oscillations grows and then decreases over a 1,200,000-year period. At present this magnitude is small and the oscillations are only about 4 degrees.

Changes in the tilt (obliquity) of the equatorial plane of Mars to the plane of its orbit result from a combination of two motions, he explained. The plane of the Martian equator is trying to precess around its orbital plane, while the orbital plane is itself tilting in cycles because of perturbations of other planets, especially Jupiter and earth, which have considerable gravitational effect on Mars.

The same two effects exist for the earth, but for the earth the precession of the spin axis suppresses changes in obliquity (the tilt of the axis), Dr. Ward said, while on Mars obliquity variations are intensified by the spin-axis precession.

The Caltech scientist realized that the coupling of the two motions might be very important for Mars. He solved for the motion of the planet's equatorial plane. Important in the calculations was the shape of the planet—its equatorial bulge. That determines the rate at which the spin axis moves in a cone-shaped path, as does a wobbling top. Also important to the results was the amount of tilting of the orbital plane, as well as the present observed position of the Martian spin axis, and the position of the planet's orbit.

The Sign

Continued from Page One

Parasite turned out the expansion devises, simultaneously using two mills, a drillpress, a bandsaw, taps, and other metal-working equipment.

Meanwhile, with occasional interruptions from campus security officers, Gloater, Blark, and company were gluing the muslin sign to its frame. So if you were wondering why so many people had a great interest in the sand south of Damney House, now you know.

Friday

The final phase of the erection began at 4:30 Friday morning with the completion of the last expansion anchor. Warmbrow and Patty Reversa went up to the Millikan Library roof (liberated by the Moles last month), set up the ropes for climbing the building, and were soon evicted by campus security.

Soon after this unfortunate interruption, Keyfaker and Richardson went up to the roof, and after readmitting Warmbrow and Reversa, the climbing ropes were lowered down the east face. Soon Warmbrow and Keyfaker were standing in slings below their jumars and prusiks with Richardson and Reversa on belay.

The Expansion Anchors

By 6:00 all the expansion anchors were in place. These anchors in no way damage the granite face of the building, but merely take advantage of the vertical cracks which have existed on the face since 1966. They are not "Mountain-climbing pilons [pitons?]" as reported in the May 5 Pasadena Star-News.

By this time the sign had been borne down California and Wilson Streets, surprising quite a few early-rising Pasadena motorists, and it was then raised up the east face, despite its objections. (Can you believe it thought it was a sail trying to pull the library (and Gary Lye) through Millikan Pond?) Only 30 fingers were wasted in the lifting process, which was directed by Gloater (from the bridge, of course).

Got A Drill?

At this time our fearless crew encountered its first major tech-

nical difficulty of the climbing phase. The east face of Millikan Library, they discovered, is narrower than the west face. This meant that the frame's holes for anchoring screws, which were drilled according to west-face measurements, were not well-suited for east-face anchors.

Within seconds, however, a drill and 100 feet of extension cords appeared on the roof, and Warmbrow went down on jumars to drill new holes and bolt the sign into place. Note that he did not drill into the granite face, but only into the sign's wood frame.

By 9:00 all the bolts had been fastened, and after a brief string-cutting foray by Keyfaker, the sign was in place and the Damney project, which had by that time drawn many amazed stares, was completed. Even Harvey Black, institute president, had christened the sign with a few "crazy undergrads" glances.

PHASE II

By Friday afternoon pictures of the sign and its erectors were on the wireservices to all the nation's newspapers. But of course the sign, while a great technical accomplishment, was threatening our commander-in-chief at a time when he most greatly needed our support.

After all, a minor burglary attempt of which he had no knowledge had been exaggerated by the press to the point that some normal, right-wing people were beginning to doubt his integrity. It is too bad that the first amendment was ever passed, but at least we now realize that it doesn't mean you can say anything you want to.

CIA?

To correct for the treasonous act of putting such a blasphemous sign in a public place, two courageous Americans took action on Friday night. Rather than doing such a cowardly thing as going down on ropes and painting out the sign or taking it down, they courageously lowered a torch down to the sign and set it afire.

Sure, the burning left a lot of burn scars and soot marks on the wall. And the letters of those ugly words refused to burn, but fell smoldering to the ground. But all these problems were greatly outweighed by the re-

moval of the blaspheme from public view. And if the Pasadena Fire Department had not let itself get tricked into answering an alleged arson call in Millikan, the whole sign would have burned up, a fitting end for such a treasonous message.

PHASE III

By Sunday morning it was time for the valiant forces of B&G to strike. There was to be a trustees' meeting on Monday, after all, and signs are not supposed to be on Millikan for trustees' meetings (see the institute charter for details).

Unfortunately B&G did not possess the technology to easily remove the sign. So they spent all weekend calling Damney Hall, trying to contact the sign's erectors. When they kept getting no answer at Damney Hall (the administration offices there are closed on weekends, after all), they tried to contact Warmbrow and Keyfaker at their residences near Pangnirtung, Northwest Territories, all to no avail.

(B&G could have tried calling Damney House, of course, but such a phone call would not have been expensive enough to warrant the effort. Besides, if they had contacted Warmbrow or Keyfaker, B&Gers would have been deprived of many hours of double-time pay for working on Sunday morning.)

Brute Force Triumphs?

So with grappling hooks and ropes, B&G chipped away at the sign's frame, chipping away much granite in the process. After many hours of brute-force work (Warmbrow and Keyfaker esti-

Screening

Continued from Page Six

stealing away to. So was the co-feature, the perennially-brilliant George C. Scott taking on the Army's cover-up in *Rage*. Incidentally, the current show at the Academy (Colorado and Catalina) is the Peter O'Toole-Sophia Loren *Man of La Mancha*.

For all the classical movie buffs in the audience, the Esquire Theater's Shakespeare Film Festival this week presents Olivier's *Hamlet* at 11:00 a.m. Saturday. Successive weeks will bring *Othello*, *King Lear*, *Macbeth*, and *A Winter's Tale*.

mate that they could have removed the sign intact in less than an hour), B&G had shredded the frame and removed it, leaving behind only the expansion anchors, soot marks and grappling iron scratches.

And thus a sign which had a natural lifetime of many days (months? years!) was willfully destroyed by man in a few hours. Perhaps it is more illuminating that the sign's demise came at the hands of man rather than more natural causes, as it shows how much certain persons respect the technological accomplishments of others.

But even though the sign was destroyed, the spirit under which it was made and erected remains uncharred among many members of Damney House. See \*\*\*\*\* of Lacquer House for confirmation.

P.S. Warmbrow and Reversa removed the expansion anchors on Monday night.

MASCIT

Continued from Page Two

or an abstention as a general comment on the entire election?) it was necessary to go "by the book," and as Resolution III clearly states, a "no" vote is when you write "no". Further, nominations for Sophomore Secretary and Treasurer are open until May 15.

\$20,000 Again

Johnson reported that he talked to Development last week and "I got nowhere." It is clear that the money was solicited "for the students" from their parents without the students having any say in what the money was used for; in fact, the money seems to go into the Institute's general account, and the Institute then uses their famous funny-money to allow every student an extra half-hour of computer time. Since PDP-10 time costs, at most, ten or twelve dollars an hour (a figure that certainly is not off by a factor of three), and since \$20,000 is clearly a bit greater than the \$4000-\$5000 it would cost (considerably less since probably less than half the students ever use any of their time), it is pretty . . . well, strange is a nice word to use.

About Town

Continued from Page Five

musical version of *Two Gentlemen of Verona*.

*Don't Bother Me, I Can't Cope* a soul-jazz-gospel musical, will remain at the Huntington Hartford Theatre until June 10.

Clubs

The Troubador will offer *The Association* and *Sandy Denny* until May 13. The following week *Herbie Hancock* will appear.

At the Ash Grove you will be able to hear *Steeleye Span*, an English Folk Group that has been getting a lot of attention.

Whisky a Go Go is currently presenting *Roy Gallagher*, while from May 23-27 *Muddy Waters* will entertain there.



Page Ten

Thursday, May 10, 1973

**It's Prereg Time**

## Courses! Failed Again!

by Staff

As usual at this time of the term, your friendly *California Tech* staff brings you inside information on some of the new courses which will be offered for preregistration this coming week. (For general comments on traditional courses, see the Teaching Quality Feedback report, which ought to be available by September.)

The Humanities and Social Science people have several new classes this coming year (plus a number of renumberings; see previous issues of the *Tech* for information on these). Caltech Director of Secondary School Relations Lee Browne will teach a course on education (unique at Caltech): Pl 104, Educational Issues and Problems (3-0-6). The number is old, but the format will be new, and will relate to Browne's Saturday program for students from surrounding schools. "Participation in that program will be optional," says Browne, "but we hope to get Pl 104 students working with small groups of kids. There will probably be some sort of reports from the class on the philosophical and psychological techniques that they used to change the behavior of their kids."

Correction note: in the Registrar's preregistration packet, SS 11a, Social Science Principles and Problems, is erroneously listed as a 6-unit course. It will in reality be a 9-unit course.

### Interdisciplinary Course

A new interdivisional course will be offered next year in geology and environmental science, Env 103ab (also Ge 103ab), Introduction to Processes of the Atmosphere and Hydrosphere (3-0-6). The catalog write-up reads as follows:

Natural physical and chemical processes of the earth's atmosphere and hydrosphere. Emphasis will be on developing an order of magnitude understanding of the atmosphere and oceans through analysis of observations and physical reasoning. Topics covered will include the global heat balance, polar ice caps and climatic change, temperature distributions; tides, waves and currents; cloud formation; precipitation, runoff, floods, sediment transport and deposition; geochemical cycles. Instructors-in-charge: List (first term), Ingersoll (second term).

Watchers of the recent foreign languages fiasco at Tech might be interested to hear that the preregistration lists still contain three years of instruction in each language offered, the third year listed as taught by 'Staff.' Two sections of literature in translation, in French and German, are also listed. Whether or not these courses really exist will not be determined until September.

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to the behavior of astronomical bodies. He also is well known for his investigations of black holes.

Dr. Ramo, who already is a member of the National Academy of Engineering, has specialized in research in electronics, microwaves, and guided missiles. His systems approach to missile problems has resulted in important advances in the technology of the field and he has been instrumental in applying the same study methods to research on urban and social problems.

## Profs Elected

Continued from Page Four

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## SCILAC Championships

# Griffin, Robinson Set More Records

Three outstanding performances were registered by the Caltech track team at the conference championships last week. The Beavers finished fifth in the meet, scoring 22 points. Oxy repeated again as champions with 119 points. The Techers were hampered by two key injuries which reduced their scoring potential and they missed Coach Bert La Brucherie, who has been hospitalized.

The three Techers who registered excellent marks were Greg Griffin, Al Kleinsasser, and Haywood Robinson. Kleinsasser was suffering from a sore arch and didn't compete in the mile and Greg Hoit's leg problem made it difficult for him to be effective.

### A Memorandum To

Greg Griffin set another school record in the three-mile with his 14:25.6 time, good for second in the race. This was the third time this year that Griffin had broken the record. Last year his best time was 15:09 and his 44-second improvement this season earned him the team's most improved runner award.

Griffin led for the first mile in a 4:42 time and passed the two mile mark at 9:35. He was defeated by Isaaah of Redlands who won with a 14:00.5 after winning the mile in 4:11.6. Griffin continues to show marked improvement each week and will probably move up to the six-mile in NAIA district competition.

### Good Old J. Black

Alan Kleinsasser was placed for some strange reason in lane 14 in the 880, which resulted in his running his fastest 890 yards in an 880-yard race. Kleinsasser's time was the season's fastest, a 1:52.2. It took the Techer nearly 300 yards to gain the lead and he passed the 440 in 54.8.

Kleinsasser's time is the fastest in the NAIA district and makes him the favorite to win the district championships. This is the second year that he has been the SCILAC champion and the middle-distance star should place high in the national championships later in May. He also competed on the nonscoreing mile

relay team, running the anchor lap in 51.0.

### For Lit 15 Credit

On a day when it rained heavily for almost half the meet, it was not ideal for sprinting, but Haywood Robinson ran an excellent 220. In the preliminary heats held on Friday, Robinson ran a 9.8 100-yard dash and a 21.6 220 to set a new school record.

In the finals of the 100, run during a rain storm, the best Robinson could do was 10.0 on the wet and heavy track. The judges awarded him third place to the surprise of his teammates and coaches, who felt he had a clear second. He was given the same time as Oxy's Osterholt in the race won by Whittier's Debato in 9.9.

### Just Keep Writing Track

In the 220, Robinson finished in a time of 21.7, only to be edged in the last ten yards by Osterholt, who also ran a 21.7. Robinson had a fine start and led most of the race. Robinson, along with Kleinsasser, received the team's most outstanding athlete award for the season. The Techer also ran on the fifth-place 440 relay team and the mile relay.

Charles Almquist finished fifth in the 440 intermediate hurdles with a time of 56.8. Almquist also ran on the 440 and mile relay teams. Greg Hoit competed in the hurdle race and also on the two relay teams. Both Almquist and Hoit received awards for their outstanding

marks during the year at the team's annual dinner.

The 440 relay team finished in a scoring fifth place with a 44.1 mark. The team was comprised of Robinson, Hoit, Steubs, and Almquist.

### Burma Shave


The Caltech weightmen scored valuable points. Brent Sweitzer finished fourth in the shot put with a mark of 44-2. The event was delayed 45 minutes due to rain and during competition the ring was very slick. Doug Herbert finished third in the discus with a throw of 130-9. Also competing for Tech were Brad Page, Steve Bienz, and Bob Miller.

On Sunday, Greg Griffin finished his week of running by competing in a 10,000-meter race in Lakewood. The distance ace finished in a lifetime best of 30:38 to earn a handsome second-place trophy. He will enter the six-mile event in the district and should place high.

This week several of the team will prepare for the NAIA meet by competing in the Riverside Invitational. The district meet will be in two weeks at Redlands. Griffin, Kleinsasser, and Robinson should score well for Caltech.



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# Behavioral Engineering

Continued from Page One

of behaviorism for ignoring 'internal' events (such as cognitive mental activity) by stating that many behaviorists today regard these events as very important.

"Free will versus determinism is too simple and reductionistic an approach. We have 'free will,' if you will, because we can change the environment," said the behaviorist, who sees one of the important tasks of man as the combination of behaviorism and humanism to 'create the good person,' a goal of humanistic psychologist Abraham Maslow.

### Every Day In Every Way

The techniques of behavioralism include "a technology of

positive thinking;" students are encouraged to perform by receiving tangible, countable rewards: tokens, privileges, kind words. The 'aversive contingencies' so common today need not be used; "Students today study mostly in order to avoid the consequences of not studying," in Skinner's words. Questions of who is to control behavior and for what purpose are important ones, said Dr. Thoresen, but many behaviorists feel that behavior is going to be controlled somehow anyway, and it is better to do so openly and reinforcingly. Dr. Thoresen ended by promising that behavioralism can turn over "power to the people — perhaps that is what freedom and dignity

are really all about.

The speaker on behalf of humanism was Dr. Floyd W. Matson, professor of American Studies at the University of Hawaii. Dr. Matson began by congratulating Dr. Thoresen for being "a humanist at heart," then went on to describe the behavioralism-humanism conflict as a "schism of the soul," leading to such choices as "strategy versus conscience, technocracy versus humanism," depending on the observer's point of view.

### Eye of the Beholder

Dr. Matson held the Watergate conspirators to be examples of men bound by the "organizational imperative," who know "no sense of limits of bound" to what they can do, the samples of the men behavioralism would produce, "technological man." Technological man demands "to-

tal solutions to vexing social problems," and is concerned only with "the efficiency of operations, their success, stability and equilibrium states, and the acquisition and preservation of power." Dr. Matson held Machiavelli to be the first applied behaviorist, and likened the Watergaters to fascists.

Early behaviorism held man to be no better than a machine, contended Dr. Matson, who produced quotations from John Watson to back up his claim. Nor did the humanist feel that contemporary behaviorism was substantially different from its predecessor in underlying philosophy, even though the trappings have changed somewhat. Dr. Matson portrayed behaviorists as perturbed that "anything so refractory to eighteenth century science as man should clutter up the worldscape."

After that speech, the conferees withdrew to partake of an Athenaeum lunch, some form of Mystery Meal, and returned to Baxter Hall to see a couple of films which the moderator, Dr. Whitely, had made of interviews of his with B. F. Skinner. After these were over, the audience took part in general question-asking with the two speakers and discussion of some of the issues brought up by behaviorism.

The audience was disappointingly small, and displayed a tendency to vanish as the afternoon went on. Part of this was perhaps due to lack of dynamism on the part of the speakers; in the opinion of this reporter, Dr. Thoresen, the behaviorist, was 'playing it safe,' while Dr. Matson seemed inclined toward attacking behaviorism at length. All the same, important issues are easily to be found within the subject of behavioralism, and it is to be hoped that the audience gained some insights and interest in the roles of behavioralism and humanism within modern society.

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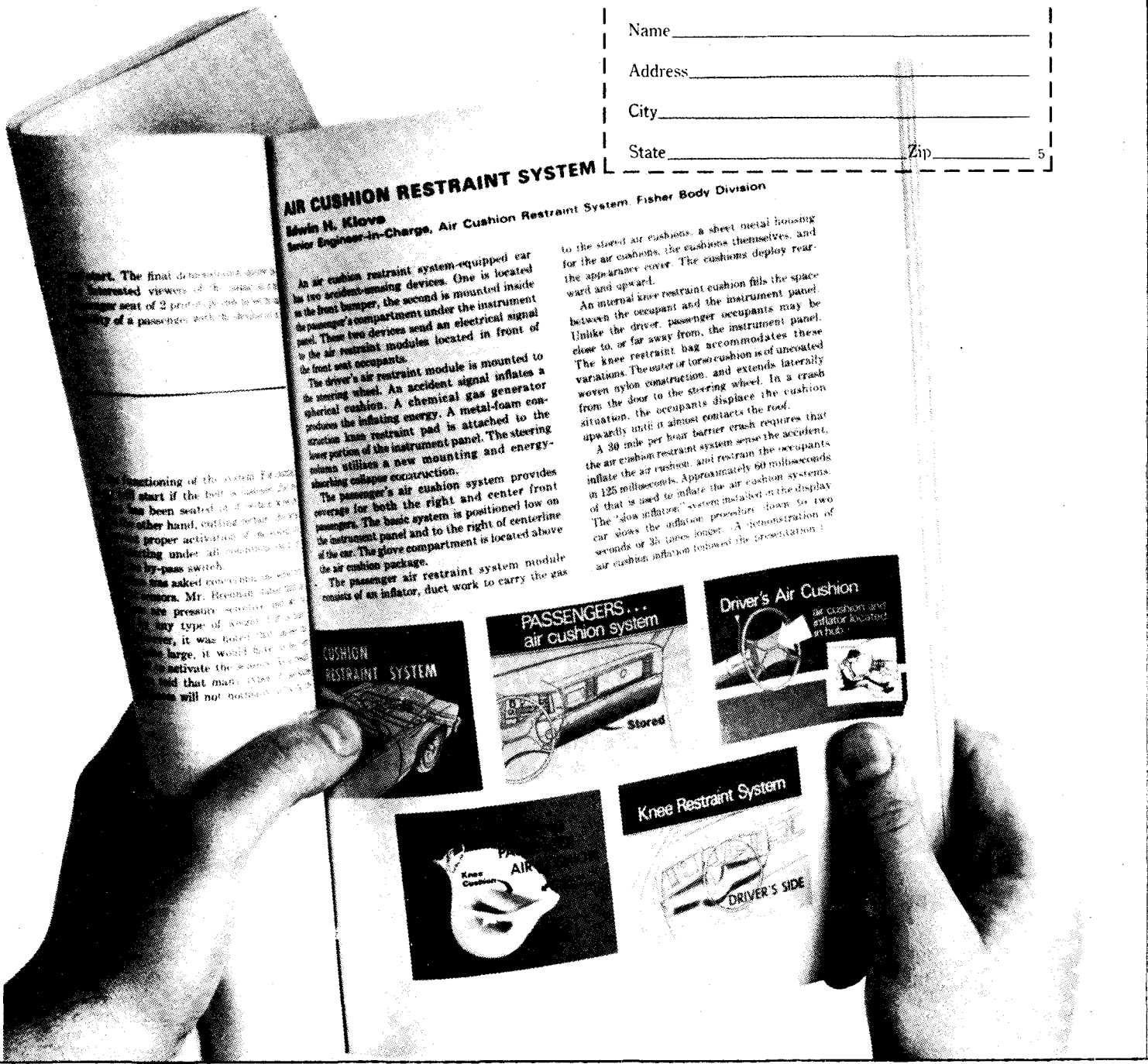
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The picture "Impeach Nixon" in the Pasadena Star-News dated Saturday, May 5, 1973, is going to cost California Institute of Technology \$1,000,000.00 in a contribution. I am wondering what the Dabney Family, who are also oil people, think of such publicity as this.

Yours truly,



Ross McCollum, President  
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William H. Corcoran

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Olive Walk Talk  
On UNICEF  
Dave Burgess, senior UNICEF (United Nations International Childrens Emergency Fund) officer will be discussing the current UNICEF relief plans for Indochina in an Olive Walk Talk on Monday, May 14. Sponsored by the Y, Dave Burgess is the former regional director of UNICEF in East Asia, Pakistan and Bangladesh.

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