

Machines Can Speak Up

by Phil Neches

The "leprechaun of Caltech," Dr. John R. Pierce, spoke about speaking machines at Monday night's edition of the Beckman Lecture Series. Pierce, an alumnus of Caltech and Bell Labs, spoke to an audience of approximately 800 about the history and future of machines which imitate human speech.

Interest in talking machines dates back about 200 years. A courtier named Kempelen, who became infamous for his chess-playing machine (the "machine" concealed a human operator of considerable attainments) produced a machine (a real one this time) which could reproduce the major vowel sounds and several of the consonants. Kempelen was able to synthesize short sentences with his contraption.

Pa Bell

Since then, several other approaches to building a speaking machine have been tried. One, followed by Alexander Graham Bell in his youth, involved attempting to recreate the human vocal apparatus with artificial materials. Using gutta percha, wood, rubber, and some ingenuity, Bell and his brother produced a machine which could say "Mama!" so convincingly that one woman ran into the room in utter consternation, wondering what her baby wanted.

Others attempted to make mechanical models equivalent to the human vocal system using bellows for lungs, reeds for vocal chords, and various systems of resonant cavities, whistles, movable orifices and the like to represent the complicated acoustical system formed by the throat, mouth, palate, teeth,

tongue, lips, and nasal cavity.

Electronic Wizardry

More success came in the 1920's and 1930's with the application of electronics to the problem. Using oscillators for vocal chords and resonant circuits for most of the rest, Bell Labs produced a device called the Voder for the 1939 World's Fair. Played by a skilled operator, the Voder's ten or so keys plus wrist switches and foot-pedals did a remarkable job of creating artificial speech which was at least recognizable.

In work still continuing, computers are used to drive more sophisticated speech synthesizers.

To Imitate . . .

Most speech synthesizers, whether mechanical or electric, make use of one of two approaches: direct imitation or

Continued on Page Six

The CALIFORNIA Tech

Copyright 1972 by the Associated Students of the California Institute of Technology, Inc.

Volume LXXIII

Pasadena, California, Thursday, February 17, 1972

Number 18

Caltech Presents Series Will Feature Varied Musical Fare

by Jeff Mallory

Once again a new season is coming up in Beckman Auditorium's *Caltech Presents* series, and it's time for a quick once-over of upcoming events. The season promises a really wide variety of music, from contemporary and classical guitar and piano, to jazz, folk, pop, and Mexican pieces. Series tickets are \$28.00, \$22.00, and \$16.00 for Tech and JPL people and \$6.00 for Tech Studs.

Oscar Ghiglia, the guitar mentioned above, will lead off on March 11, with a platform dedicated to both contemporary and classical composers. He has had a distinguished career of associations with the Conservatorio di Santa Cecilia and the Accademia Chigiana, where he studied under Segovia. Ghiglia is especially known for his incredible range on the guitar and the fluidity of his style. Single

tickets are \$4.50, \$3.50, and \$2.50 and \$1.00 for Techers.

Heralded as "youthful ambassadors of America the world over", the *Young Americans* will present a program of folk songs, ballads, and popular tunes April 1 in Beckman. The group is made up of forty musicians from high schools and colleges in Southern California, and is widely known for its spirit and exuberance. Tickets run from \$5.50 to \$3.50 and \$2.00 for CITers.

In one of its most interesting presentations of the year, Beckman will bring *Jack Aranson* and his one-man condensation of *Moby Dick* to Tech, [April 6, 7, and 8. Aranson manages to play all twelve characters in the drama with a skill and depth that has won excellent reviews across the country. There will be four performances, with tickets from

Continued on Page Four

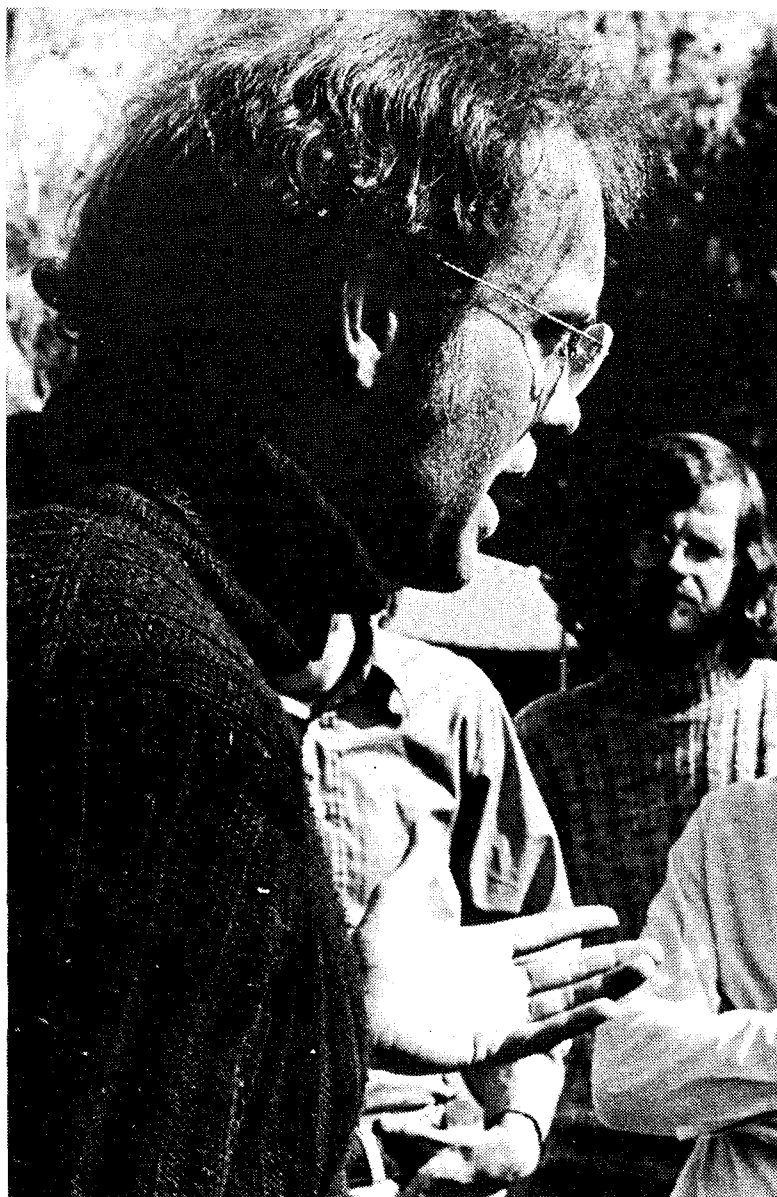
Interhouse Sing Lives; Changes, Additions Planned

Although initially plagued with a near-terminal dose of apathy and a coordinator bed-ridden with the flu, the traditional Interhouse Sing (IHS) will occur this year, with new additions and modifications.

There are four categories of competition: 1) chorus — for groups of 12 or more house members; 2) quartet — for quartets of house members (men and women); 3) mixed — for some combination of men and women house members; and 4) random — open to anyone. To date (2/15), word has been received of chorus entries from Fleming and Lloyd, and entries in all categories from Ruddock. Today is the last day to enter acts in IHS. Contact Kelly Beatty (221 Ru) or Bill Derrick (210 Ru) for details.

This year's IHS offers the special attractions of J. Kent

Continued on Page Six



DAVID HARRIS confronted Tech's apathy last Monday to speak out against American Industries' mechanized war in Viet Nam and to give our photographer an idea of life in Federal Prison. —photo by Ctein

Draft Resistor Harris Raps on Prison Life

by Schroedlu

"There's no loneliness like getting out of prison."

David Harris, Resistor, activist, speaker, felon, was rapping in Winnett Center.

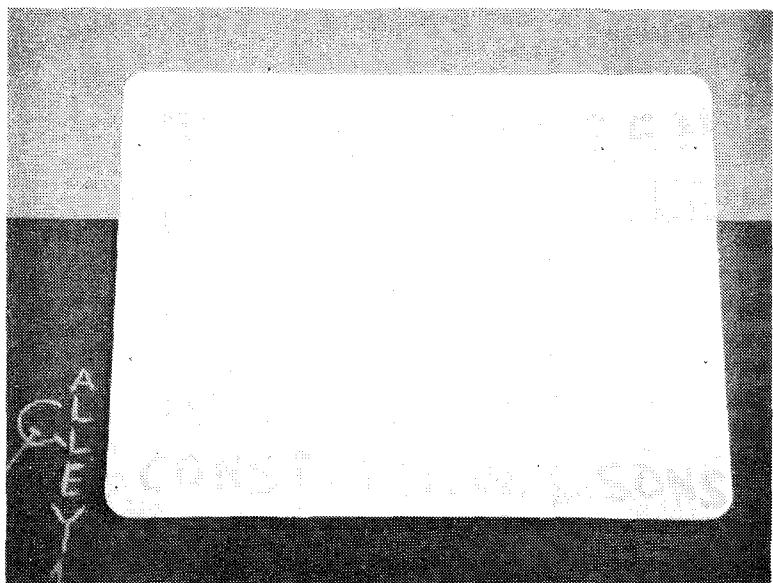
"You learn that it's not just a game of words — you're vulnerable, and you can be hurt."

David Harris was explaining his trip. Not preaching, not exhorting, not insisting, but describing, telling what he did and how he felt and why he did it. "I simply decided that I couldn't be a happy person while the things going on in Viet Nam, for instance, were going on."

David Harris opposes much of what the American government is doing, and the American govern-

ment put him in jail for it. He learned from the experience: "Every American prisoner is a political prisoner — they're all there not because of what they did but because of the circumstances under which they did it." If the government hoped to be rid of David Harris so easily, they were wrong: "In my line of work you have to expect a lack of security from the enforcement agencies." "Line of work": it's a job, a job he wants to do, a job that he thinks needs to be done, and he's doing it. With respect for other people and their opinions and problems and trips. Decently, openly, with concern. That's all.

Behavioral Biology Dedicated



Members of Fleming House held an unscheduled and somewhat premature dedication of the new Behavioral Biology Laboratory over the weekend. The lab is named for a distinguished alumnus. —Photo by Polaroid

Two Run-offs Today

Joe Morin Elected ASCIT President

Joe Morin was elected the new ASCIT President Friday with a bare 50.7% of the vote. His victory over Ron Horn and Phil Neches (not to mention seven "others") came at the end of the usual hard-fought campaign which brought well over half of the voters out of the woodwork to cast their ballots.

Sharon Spivak retained her seat as Director of Academic Affairs by decisively defeating Ed Hedgecock 294 to 83. Greg Simay and John Land became the new Directors at Large while Steve Kelem beat Kevin Ruddell

for the joyful job of running the ASCIT movie.

The races for two offices, Secretary and Treasurer, resulted in runoffs which (hopefully) will be held today. In the race for Treasurer the members of ASCIT will have to choose between Lee Kondor and Steve Wat for a second time. Due to a large vote for "others" neither candidate received a majority the first time around. The voters will also have to choose between Jim Hugg and George Rand, the survivors of Friday's three-way race for Sec-

retary.

All the candidates running unopposed won by more-or-less large margins. So, at this time the ASCIT officer line for next year is:

President: Joe Morin
Vice President: Russ McDuff
Secretary:?
Treasurer:?
Director of Student Life: Jim Price
Director of Academic Affairs: Sharon Spivak
Directors at Large: John Land and Greg Simay

Continued on Page Seven

Editorial

Is Drop Day Fair ?

About three weeks ago, the announcement came down that henceforward Drop Day shall be rigidly enforced. We feel that this decision has already created potential for unfairness.

Many professors give midterms after midterms week, and some give none at all. In either case, the student who is doing poorly will not get a midterm deficiency notice ("blue slip") and thus may not find out that he ought to drop a course or take it pass-fail until his last opportunity to do so has passed.

In the past, the Registrar's office has bent the rules when the reason seemed sufficient. Apparently, the Standards and Honors Committee feels that this is unfair to the students who drop and pass-fail their courses before the prescribed dates, or who are not as apt at making their reasons for not doing so sufficiently convincing. However, we feel that the Committee's decision is unfair to students whose professors give late midterms or do not take the time to tell each student how he is doing before the sixth week of the term.

Either the Committee should force all professors to either give and grade midterms before midterm deficiency notices are due, or in some other manner seek out and counsel all their students who are not doing passing work in their courses, or else rescind its recent directive to the registrar. Continuing with the present policy raises the possibility of forcing students to continue to take courses in which they will receive poor grades, with the added onus of giving the student no warning.

But further than that, we would like to see the Committee remove the entire notion of a Drop Day fixed at some point in the term. We see no reason to hold a student in a course in which he feels he is making no headway. Many other reputable schools permit dropping courses even up to the final exam. A student gives up a great deal of his time and effort in dropping a course late in the term. If he is willing to make that sacrifice, we find no reason why the Institute should not let him do so, except, of course, in cases of repeated and flagrant late dropping.

Perhaps the Institute should go further. At some schools, among them Stanford, a grade lower than a C is simply not recorded unless the student wishes it so. If a student does not receive a passing grade in the course, he simply receives no credit for the course. Naturally, this does not excuse any student from requirements: if he does not get credit for a course required, for example, in the freshman year, he must make the credit some time later.

However, more is at stake than the possibility that a few students may have lost the chance to drop or take pass-fail certain courses (we do not even allege that this has actually happened - yet). Rather, the Committee's decision to enforce this and other catalog regulations with a Spartan rigor seems to contradict one of the basic principles of the Institute: that Caltech should be small enough and flexible enough to treat its students as individuals rather than as a faceless mass.

We particularly object to the Committee's pronouncement on grades of "pass" in letter-graded courses. The ruling has the effect of prohibiting a professor from grading a course "A-Pass-Fail", and punishes the students in the course by having the Passes recorded as D's. While the Committee has a valid point in that students who take courses graded A-Pass-Fail have an advantage over students taking courses on the regular basis, we think that wreaking havoc (even if only temporary) with student's GPA's does not provide an acceptable solution.

However, the Committee's action should focus concern on the present state of the grading system. Completely abolishing grades may be unfeasible, but certainly the system can be improved.

It most certainly should be.

-Philip M. Neches
-Peter W. Beckman
-Paul A. Levin
-Gavin D. Claypool
-Jeffrey J. Mallory

Letters

Hutten Spears Back



Gentlemen:

It is not my custom to answer crank mail, but the letter from Raymond Spears which appeared in your issue of February 10 was so filled with error, of both interpretation and fact, that I feel I must make an exception at least this once.

First let me make clear that, when I hope for greater involvement in the affairs of the world on the part of Caltech students, I do not urge them to become ill-mannered, discourteous, intolerant or publicly obscene. Secondly, I should point out that Mr. Spears describes most inaccurately what transpired in the course of a conversation among me, Dr. Smith, and several others. No doubt this unhappy circumstance is largely due to the fact that Mr. Spears did not attend the meeting.

For the record, let me relate my part in what was indeed, as the Tech puts it, "an exceedingly strange event." It was reported to me in my capacity as Dean of Students that Dabney House had, for the benefit of Dr. Ian Hunter, an invited dinner guest, performed an extremely offensive skit which was in essence a direct personal attack on him. I found the description of the event appalling, but urged no disciplinary action. Oafishness, vituperation, and calumny are not specifically contrary to Institute regulations. On the other hand, I found it astounding, if the report were correct, that a student house should hold itself in such low self-esteem as to allow some of its members to deliver an egregious personal affront to a guest.

During what Mr. Spears calls "a somewhat too vigorous psychodrama", a series of acts allegedly took place which were both illegal and in blatant

violation of one of the few rules the Institute asks students to respect. I want very clearly to differentiate between those transgressions which come under the heading of bad taste and those which violate established Institute policy. The former we are at liberty only to deplore. The latter category demands a vigorous response, and I consequently did advise Dr. Smith to take strong disciplinary action against those involved, if what had been reported to me turned out to be true. I make no apology for this, and my attitude in no way runs counter to the sentiments correctly attributed to me by Mr. Spears in the first part of his letter.

Sincerely yours,
Robert A. Huttenback
Dean of Students

Editors:

I feel it my responsibility to help clear up a number of confusions and misstatements made during the last two issues of the Tech. The first of these concerns censorship of the Tech.

During the history of the Tech, censorship has played a vanishingly small part. The only question ever asked concerning material for an issue is "Can we be sued or lose our mailing permit for it?" If the answer to the question is no, then any material for which there is room is printed, no matter how controversial the subject.

The Tech, however, does make mistakes. Last week, one or more of the Editors-in-Chief stated that no member of the Tech staff was present for the entirety of the Dabney House "psychodrama", a statement ignoring the fact that I myself was there. In any case, I did not feel that I could provide sufficiently unbiased copy for the needs of the paper, nor did I feel it necessary to write an article

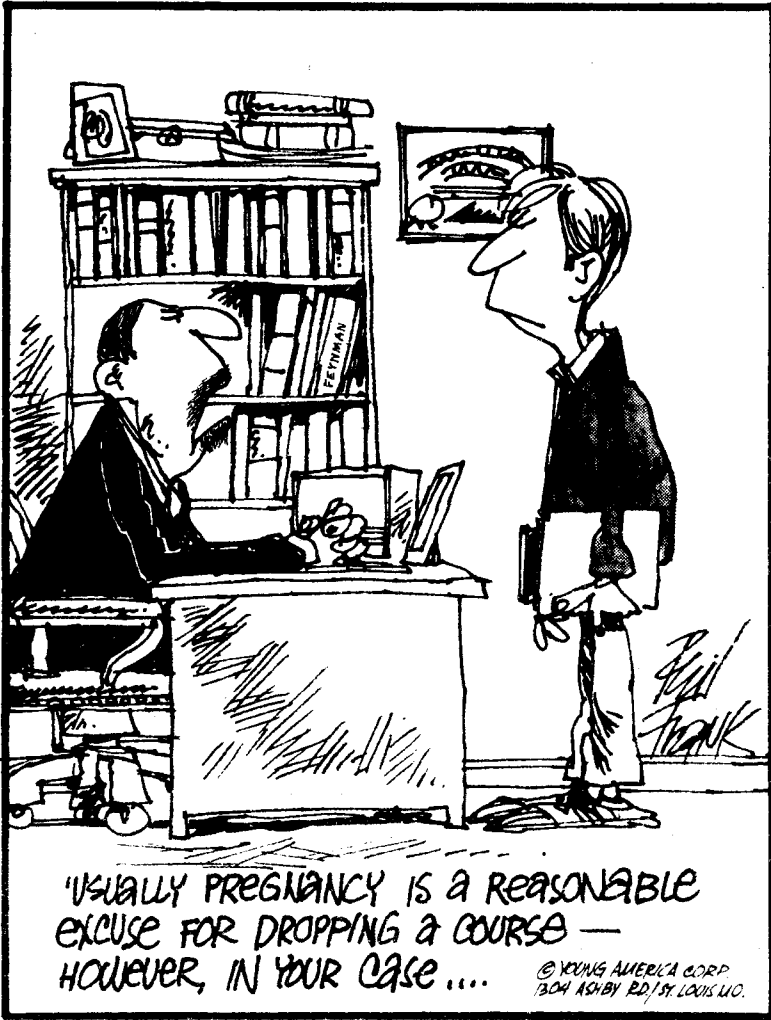
about the event. I felt, and still feel, that the only person who had the right to bring the matter before the public was the main figure, Dr. Hunter. (As a further note, at no time was I asked to write an article, although at least two of the editors were aware of the fact that I had been present.)

As for Dr. Huttenback's reply, I agree that the original letter was crank mail. I saw no hypocrisy at all in Dr. Huttenback's statement. I must take issue, however, with his specific criticisms of the behavior of Dabney House. Oafishness, discourtesy and ill-manneredness are a matter of opinion, and it is entirely possible that the average well-bred individual might agree that the proceedings were all of the above. However, the other accusations, of calumny, intolerance and public obscenity are perhaps ill-considered. The events were public only by a considerable stretch of the word, and if two males kissing is obscene, then so be it. For the events to have been calumnious, they need have been both slanderous and malicious in intent. In bad taste the events were, but I do not see that Dr. Hunter was publicly slandered. The last charge was one of intolerance. I think that if that were true, Dr. Hunter would not have decided to come back and talk to the members of Dabney House at a later date.

Continued on Page Six

FRANKLY SPEAKING

by Phil Frank



The CALIFORNIA Tech
Volume LXXIII Number 18

Published weekly except during examination and vacation periods by the Associated Students of the California Institute of Technology, Incorporated. The opinions expressed in all articles herein are strictly those of the author and do not necessarily reflect those of either the editors or the newspaper staff.

Copyright, 1972, by the Associated Students of the California Institute of Technology, Inc. All rights reserved.

Editors-in-Chief: Peter W. Beckman, Paul A. Levin, Philip M. Neches.
Entertainment Editor: Nick Smith.
Features Editor: Philip Massey.
Photography Editor: Alan Ctein.
Sports Editor: Gavin Claypool.

Staff Claude Anderson, Val Catanzarite, Emden Gansner, Andrea Goldfarb, Bob Kieckhefer, Gesine Lohr, Jeff Mallory, Dave Peisner, E. Burner Pontius, Channon Price, Andy Renie, Ed Schroeder, John Tristano.

Photographers Bob Houk, Bill Loucks, Gene Myers, Bill O'Meara, A. J. Owens, Eric Vella.

Business Manager: Marvin Mandelbaum.
Circulation Manager: Bob Olshan.

The California Tech Publication
Offices: 115 Winnett Center 105-51, California Institute of Technology, 1201 East California Boulevard, Pasadena, California 91109. Telephone: (213) 795-6841, extension 2154. Printed by News-Type Service, 125 South Maryland Avenue, Glendale, California. Represented for national advertising purposes by National Educational Advertising Service, Inc. Second Class postage paid at Pasadena, California.

Subscriptions \$1.50 per term
 \$4.00 per year
Life Subscription \$100

Registrar's Letter

Drop Or Be Dropped!

Following is the text of a letter from the Registrar which went out to the faculty last week concerning dropping courses, grades of "incomplete" and "conditional," and grades of "pass" in letter-graded courses:

The Undergraduate Academic Standards and Honors Committee has felt for some time that significant numbers of both students and faculty were ignoring or breaking the rules and regulations established relative to course loads, changes of program, and grading practices. This practice has resulted in some students obtaining unfair advantage over others in respect to their grades in certain courses and in respect to the course load they have been required to carry. Some faculty members have compounded the problem by applying different grading standards to different students in the same course. The Committee has decided, therefore, to enforce the regulations published in the catalogue regarding the last days

for adding and dropping courses, for changing the grading basis in a course from pass-fail to letter grades and vice-versa, and for minimum and maximum loads. (The due date for receipt of petitions to carry excess units will be changed from the last day of pre-registration to the last day for adding courses in each term.) The appropriate dates for the rest of this year are given below. The Committee asks that you inform your students and/or advisees of this for their benefit; students have been forewarned by memo from Dean Huttenback and by an article in the January 13, 1972 *California Tech*.

The regulations regarding grading will also be followed as published beginning this term. The pertinent features for you to be aware of are as follows:

1. A grade of "Inc" is not allowed unless it has been authorized by the Dean. If a student has not finished work in a course, the appropriate grade for him is "E" (Condition) unless the appropriate Dean agrees that

there were reasons beyond the student's control for the unfinished work. A grade of E may be changed to a D after the condition is made up; otherwise it will revert to an F. The Committee has instructed the Registrar to record "Inc" only if he has authorization from the Dean. Any unauthorized "Inc" or a no report will have to be recorded as an "E".

2. Freshmen receive only grades of Pass or Fail. Other undergraduate students may get "Pass" grades in a letter-graded course only if they have requested this option through the Registrar's Office before "Drop Day". Unauthorized grades of "Pass" will not be recorded, and a "D" will be recorded unless the instructor furnishes the appropriate letter grade prior to the established date for removing conditions.

The Committee feels that it is unfair to those students who do abide by the published regulations to allow significant deviations from them for trivial reasons. We hope, by publicizing things in this manner, to come closer to an equitable treatment of all students.

Ed. Note — Unfortunately, this letter arrived too late for publication in last week's issue.

1717 After Hours

Security by the Number

Many people have had some trouble getting in touch with Security after hours, and with our small force, finding them by phone can be a problem. If you want a guard to come to a specific location after hours (between 4:00 p.m. and 8:00 a.m.), your best bet is to call 1717, not 1702. 1717 is the number of Central Heating Plant, which serves as their night-time base.

If you want to talk to someone in Security, call 1717 and leave your extension num-

ber. A guard will be contacted by radio, and he will call you back within a few minutes. Daytime calls, however, should go to their Throop office at 1702.

Theft has been and will continue to be a major problem on campus. If you see someone where you don't think they should be, call Security: Sergeant Wiley has said that he would not mind checking out ten false alarms to get one real one. YOU are an important part of campus security!

EQL Conference

Tech's Social Awareness Shown

by Etaoin Schroedlu

Caltech publicly demonstrated its new awareness of social as well as technological concerns last Monday and Tuesday when a series of Tech and EQL staff members presented reports on their work. Ramo Auditorium was crowded with persons, many of them from the business world, who had come to hear the technical papers and the two panel discussions on social and technical systems.

Monday's opening talk was delivered by Dr. Lester Lees, Director of EQL, who presented

the major points of EQL's recently-released billion-dollar strategy for fighting air pollution in the Los Angeles Basin (see *California Tech*, Feb. 3 issue.) Other reports covered the implications of this strategy on total energy use in California and on the economic behavior of individual persons.

The panel discussions were on public policy for air pollution control, and the energy crisis, and included panel members from industry, government and private action groups, as well as EQL staff members.

ALWAYS FIRST WITH THE BEST IN
ADULT MOVIE ENTERTAINMENT
FOR THE DISCRIMINATING ADULT



VENUS
adult
Theater

DAILY 11 am to 2:30 am
SUNDAY 12 noon to Midnight

FREE!

Fresh hot coffee
for our customers!

AIR CONDITIONED
for your comfort
plenty of free parking

Now Showing:

"Hard Action"

A STRONG FILM—FIRST RUN

Starting Tuesday, February 22:

"Naked Encounter"

A GROUP ARRANGEMENT—EXCLUSIVE

A completely new show every Tuesday

Caltech students — \$1.50 off
regular admission with this ad

2226 E. Colorado Blvd. Pasadena
FOR AN EROTIC MESSAGE CALL 796-8118

THE UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION

a specialized agency of the United Nations dedicated to peace

and

THE STUDENT AID SOCIETY

a non-profit non-political organization dedicated
to helping students to help themselves
offer

\$ 6 value

STUDY ABROAD

- New 19th Edition
- Paris, France, 1972
- Each copy is trilingual in English, French and Spanish
- 644 Pages

The most complete scholarship directory in the world lists more than 234,000 scholarships, fellowships, loans and grants in more than 129 countries or territories! Tells who is eligible, fields of study, financial assistance, HOW, WHEN AND WHERE TO APPLY! Reflects the latest scholarship approach costed by financial need!

\$1.50 value

VACATION STUDY ABROAD

- Each copy is trilingual in English, French and Spanish

More and more Americans are flocking overseas for summer vacations, and an increasing proportion is young Americans! With the price war now raging on overseas airfares, record-breaking numbers of young Americans will surge across Europe this summer! VACATION STUDY ABROAD tells how qualified people will go free! Provides information on short courses, seminars, summer schools, scholarships and travel grants available each year to students, teachers and other young people and adults planning to undertake study or training abroad during their vacations. These data were provided by some 500 organizations in 54 countries!

\$ 5 value

STUDENT AID SOCIETY membership dues. Services offered:

- Scholarship information service. Answers questions concerning scholarships worldwide!
- Travel service. Plans interesting tours to exotic lands!
- Reference Service.

all
for
only \$ 6

"Your reference service saved me much valuable time which I put in on other subjects. Result: 5 As and 1 B."

CN, Ann Arbor, Mich

"The Vantage Point" is a book put together by 5 ghost writers and edited by LBJ. Your reference service is almost like my own personal ghost writer."

LC, Gainesville, Fla.

"The 3 reference books of which every student needs personal copies are Study Abroad, a good dictionary and thesaurus. I got a \$10,000 4-year scholarship from Study Abroad."

AR, Berkeley, Calif.

Student Aid Society, PO Box 39042
Friendship Station, Washington, D.C. 20016
Gentlemen: I enclose \$6 for Study Abroad,
Vacation Study Abroad and annual dues.
Name _____
Address _____
City, State _____ Zip _____

Chausson ?

Mallory
On Beckman

Continued from Page One
\$4.50 to \$1.50 and \$1.00 for the lucky ones.

If you've nothing much to do April 12, why not drop by Beckman for an all-Messiaen night with a two piano program. Appearing for the first time in So. Cal. as duo-pianists, *Olivier Messiaen* and his wife *Yvonne Loriod*, will present some of his most famous pieces. Messiaen, French composer, teacher, pianist, and nature lover, was here in last year's *Encounters* program, where Mme. Loriod played one of his compositions. Admission is on a sliding scale from \$4.50 to \$2.50 in increments of \$1.00 with bargain basement prices of \$1.00.

One of the highlights of next season comes to Beckman on Twitchy Witchy (Frantic Necromantic) Day, April 15: *The World's Greatest Jazz Band*. Featuring players from almost all the great bands of the twenties and thirties, the Band will certainly delight any audience. W.G.J.B. prices are \$6.00, \$5.00, \$4.00 and \$2.50 for Techers.

Fiesta Mexicana closes out the season with a performance on April 28. Currently on their fifth tour of the US, Javier de Leon's troupe fo singers, dancers and musicians returns to Beckman to present a display of traditional Mexican folk songs and dances. A special attraction is Floreador Charro Valentino and his magic rope work. Tickets are the same as W.G.J.B.

Architecture, both new and old, is the subject of the fourth program of Ramo Auditorium's *Museum Without Walls* series. Two films will be shown on Wednesday and Thursday, February 23 and 24 at 8:00 p.m.

Le Corbusier will be screened first, reviewing his revolutionary ideas and their impact on his design and the world. Some of Le Corbusier's most important buildings in Europe and Asia will be seen.

The long history of temple design and structure is the subject of the second film, *The Greek Temple*. The history and stories behind the great Greek temples are traced by visists to outstanding examples like Delphi, Paestum, Agrigento, and the Acropolis.

General admission is \$2.50, students \$2.00, and a Tech ID drops the price to \$1.00.

FOREIGN STUDENTS
SHIPPING SPECIALISTS OF
BAGGAGE
HOUSEHOLD ARTICLES
COMMERCIAL CARGO
AIR • OCEAN • TRUCK
Pick Up & Delivery
Packing & Crating
Insurance Documentation
Estimates given without obligation
ANYWHERE-ANYTIME
A REGISTERED AGENCY
 SINCE 1954
a tradition
of personal
service in
freight
forwarding
Martin Lewin Transcargo, Inc.
2240 N. Figueroa St.
Los Angeles, CA 90065
(213) 225-2347

MONTOYA

by Nick Smith

It is difficult to write a review about the recognized master of a form of music. There is just no one better to compare the best to. Such is the case with Carlos Montoya, master of the flamenco guitar.

When Montoya walked onto the stage for the first of two concerts at Beckman Auditorium, he spoke no word until the first encore. There was a contrast between cold aloof artistry and the warm flow of the intense flamenco guitar. The music ranged from pure flamenco to other types of Spanish guitar music. Perhaps the most startling of all was "Saeta," a piece of music based on the Holy Week procession in Sevilla, wherein Montoya produced the sounds of cornets and drums, using only a

guitar.

Montoya is not, however, just a guitar-playing machine, for he showed a warmth and humor when talking to his audience before his encores. These encores included his own version of a piece entitled "Malaguena de Laguna" (I think that is what he said. My Spanish spelling is slipping.) which was short, but moving and forceful. That is what flamenco is all about, since for hundreds of years it was only half of a form of art which included dance. Montoya was the first major flamenco artist who performed in concert without a dancer or singer, a quarter of a century ago. It is very likely that singing or dancing would only distract one from listening to the beauty rushing from the fingers of Montoya. He is the master.

Giotto, Crete, Mycenae
and Company, Inc.

by John Tristano

Giotto and the Pre-Renaissance and *Crete and Mycenae*, the second of the Museum Without Walls series, were screened last Wednesday and Thursday nights with less than fantastic results. The first film shown was on Giotto, an early Renaissance painter. Giotto painted strictly religious scenes, as was typical of the Medeival period. He was one of the first painters to attempt to break the two dimensional plane paintings that typified Medieval style. Although his attempted portrayals of the third dimension are typically imperfect, where the standards for perfection are Renaissance, his boldness in exploring and experimenting with the third dimension may have opened the pathway to the creative period that followed.

The film itself could at best be described as weak and poorly

done. It does not emphasize or even mention the growth into the third dimension. Other works of the period that were more typically Medieval were not shown to form a comparative base. The film just showed Giotto's work without any explanation of his motivations or a historical overview of the period.

The second film, *Crete and Mycenae* was a study of the Archeological findings at Knossos and Mycenae. Although the film showed many items recovered from the ruins that were artistic in nature, the general atmosphere of the film was archeological rather than artistic in nature. For this reason alone the film should not have been included in the series.

Tonight at Ramo *The Impressionists*, *Kinetic Art in Paris* and *The Art Conservator* will be screened.

The
Critical
Ear



THE LONESOME PICKER RIDES AGAIN, by John Stewart; Warner Brothers WS 1948.

This is John Stewart's most reent album, even though it contains at least one of his older songs. Much of the album was done live, and some of it has interesting guests. For example,

To Eat It
Go to Fair Oaks

by PZL/EAS
Tech Food Editors

Sometime when you feel in need of a good dinner and have \$2.25 on you (we realize that the latter is the limiting constraint), try trucking on down to the Old Town Spaghetti Works, on Fair Oaks. Follow the signs up the stairs and to the right, look for the large room decorated in Early Coffeehouse (an unmistakable decor) and order their regular spaghetti dinner.

The waiter will provide you with a trough of salad, dressing your choice, a loaf of bread made the way bread is supposed to be made, and a decent-sized plate of spaghetti topped with very good sauce (also your choice). After you have made like Loki and eaten your way down the food supply, the waiter will return and ask you if you would like some more spaghetti and bread. After you say "Yes" (this column isn't meant for Mickey-Mouse eaters) you loop back to almost the top of the algorithm — coffee is bottomless too — and iterate again, saving some room for the spumoni dessert. A very satisfactory experience.

That's Old Town Spaghetti Works, 73 N. Fair Oaks, hours 5-9 weekdays, 12-9 weekends. Happy eating.

the first cut, "Just an Old Love Song," features Kate Taylor, Peter Asher, Chris Darrow and Jennifer.

"Lonesome Picker" also has "Daydream Believer," a John Stewart song originally recorded by the Monkees. "Swift Lizard" and "Wolves in the Kitchen" were recorded live last May, and feature brother Michael Stewart on guitar, as well as Byrd Chris Darrow on electric dobro.

If you like John Stewart and his music, you will like this album. It is not quite as good as "California Bloodlines," but it is difficult to have more than one best album.

CHOICE QUALITY STUFF/ ANYTIME, by It's a Beautiful Day, Colbumbia KC 30734.

It's a Beautiful Day usually consists of David LaFlamme, vocals and violin; Val Fuentes, vocals and drums; Fred Webb, piano and background vocals; Billy Gregory on guitar; and Patti Santos as vocalist. Most of the group write as well as play and sing, so that hte style changes from song to song.

This album includes two of the group's hits, "Anytime" and "No Word for Glad." In addition, it has such songs as "Words," a song that is difficult to describe. It might be called Santana-ish, but even that is not quite accurate. The addition of the conga passages played by Coke Escovedo makes some of the cuts sound very much like Santana, but with a definite flavor of their own.

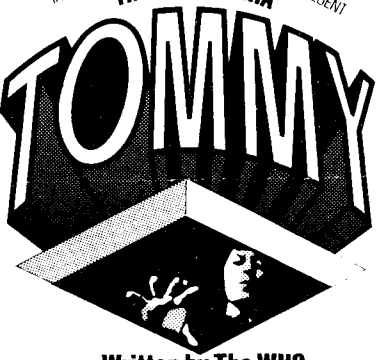
The writing of the songs was done mostly by members of the group, except for three mysteriously written by someone named Rod Taylor. He is an excellent writer, and the group members are no slouches themselves. Some of the songs are a trifle repetitive in lyric, but in those cases the instrumental work more than makes up for the weaknesses. This album rates listening to.

GROOTNA, by Grootna, Columbia C 31033.

This album was apparently produced by Marty Balin, ex-Continued on Page Five

BENEFIT PREMIERE FOR KCET FEB. 22

Special tickets available at KCET and Aquarius Box Office

CONCERT ASSOCIATES and KRLA
IN ASSOCIATION WITH SOUND IMAGE INC. PRESENT
THE ROCK OPERA

Written by The WHO
In a major stage presentation
Original recording of Tommy produced by Kit Lambert
"...the only rock opera worthy of its billing."
-ROBERT HILBURN, L.A. TIMES
Limited Engagement Feb. 22 thru Mar. 26
6 SPECIAL LOW PRICED PREVIEW PERFORMANCES TUES. FEB. 15 thru SUN. FEB. 20
AQUARIUS Theater
SUNSET AND VINE, HOLLYWOOD
PRICE SCHEDULE: 6 SPECIAL LOW PRICED PREVIEW PERFORMANCES
Tues., Feb. 15 thru Sun. Feb. 20/\$5.50, 4.50, 3.50
REGULAR PERFORMANCES Feb. 22 thru Mar. 26
Tues., Wed., Thurs., or 8:30 PM \$6.50, 5.50, 4.50, Fri., or 8:30 PM \$7.50, 6.50, 5.50, Sat., or 8 PM and 10:30 PM \$7.50, 6.50, 5.50, Sun., or 4 PM and 7:30 PM \$6.50, 5.50, 4.50
Special Discount Group Rates Call Tippi Kelly at 461-4251
TICKETS AVAILABLE AT: Wallich Music City Stores, So. Cal. Music Co., 637 So. Hill, All Mutual Agencies, All Ticketron Outlets, including: Sears, Broadway, Bullock's, May Co. and Montgomery Ward. For information Call 461-3712.



The Best Things In Life

by Peter W. Beckman
Of all the European grapes that have been transplanted to California the Chenin Blanc is one of the best and most popular. It traces its parentage to the Loire valley of France where it is known as the "Pineau Blanc de la Loire." This name is occasionally used by California wine makers, and the situation is further confused by others who label their Chenin Blanc "White Pinot".
Whatever it is called, Chenin Blanc has proven to be an enormously good, enormously popular wine. The vine is popular with growers because it is very productive, and I have yet to meet a drinker who didn't like the wine. It is fairly inexpensive, and good bottles can be found for around two dollars.

At best Chenin Blanc is an extremely smooth, fruity, medium dry wine with a light yellow color. It goes equally well with dinner or dessert, and it is just fine for random sipping.
I have tasted four Californian Chenin Blancs within the past few weeks, and here are some comments.
Charles Krug Chenin Blanc (nonvintage) — A fine wine that possesses all the qualities that make Chenin Blanc so popular. It is slightly drier than most, and one taster thought it was a touch too acidic.
Korbel Chenin Blanc (nonvintage) — An excellent buy at two dollars a bottle, it is a smooth, eminently drinkable white with just a little less varietal character than most.
Christian Brothers Pineau de la Loire (cuvee 561) — In a comparative testing this wine came in second to the Korbel. It is sweeter than comparable Chenin Blancs.
Almaden Chenin Blanc (nonvintage) — Almaden, California's

largest premium producer, did a fine job on this one. Smooth, just slightly sweet, it makes a fine sipping wine.
Bottles and Bins
Accidents happen, even in wineries, and occasionally the results are far from disastrous. This is what happened in 1968 at Mirassou when some Petite Sirah juice ended up in the wrong fermenting var. The result, Mirassou's Petite Rose, has become one of California's best and most popular pinks.
Unlike most California Roses, this wine is vintaged, and there is some difference between years. Of the two vintages currently on the market the 1970 is by far the best. It is fresh, spicy, dry wine that accompanies perfectly any meal. The 1971 vintage, just recently released, should have stayed at the winery. The bouquet of the one bottle that I have tried was 100% dead yeast. One member of the tasting group commented that it smelled like "an uncleaned silo." The yeastiness carried over into the wine itself, and the taste, while not unpleasant, was in no way comparable to its predecessor's.
Drips and Dribbles
I recently tried a sample bottle of Calvet Saint Emilion, 1967, and, although I am chauvinistically prejudiced in favor of California products, I have to admit that this was a very good French District wine. Calvet is both grower and shipper, and this firm brand indicates a high standard of quality. Look for it.

Uncle Sam Wants You For His Summer Intern Program

The Federal Summer Intern Program will be continued in 1972.
In 1971, 487 colleges responded to requests from federal agencies and nominated students. Of those nominated, 425 were selected for summer internships. Most of them were assigned to jobs in Washington, D.C., but over 100 worked in other sections of the country.
During the summer of 1972 about the same number of positions is expected. The program will provide opportunities for young men and women to become involved in the operation of their government. They will be assigned duties related to their career interests which will contribute directly to the government's missions.
All interns must be United States citizens. They must have completed their sophomore year by June 1972. Undergraduates must be in the upper third of their class and graduate students must be in the upper half of their class. Salaries range from \$120.66 to \$252.04 per week, depending on the qualifications of the intern.
If you want to apply or want more information, please get in touch with Placement in 24 Throop.
Nominations must be in by mid-March.

Time:

Eat Your Heart Out!

by Etaoin Schroedlu
"Hello, J. Edgar? Sneakily Exposé' here, from Sensation, Libel & Scandal Publishing House, autobiography division. Listen, J. Edgar, we need your help. We've got a manuscript here which claims to be the autobiography of Irving Washington Clifford, the famous financier, recluse and counter-culture anti-hero, as told to Hugh R. Howard, the fame-hungry formerly-leftist womanizing pseudo-journalist, in private interviews given at the North Pole, on Alcatraz Island, and in the Men's Room of the Taj Mahal. Can you check up on his story for me? I'll send you round all the details later.
"Yes, that's right. Oh, no, no, no! You don't understand at all! We don't want you to find out that he's telling the truth — that's no good to us! If it's going to be news, it has to be a fake — that's where the actions are. Yes, sir, we here at Sensation, Libel have the biggest and busiest legal counsel section in the business — but I'm sure that I don't need to tell you that; you've met them

often enough yourself.
"No, we want you to make sure that the whole story is a lie. That would be great. If you can show that Hugh Howard never went anywhere near any of those places, that would be wonderful. Perhaps you could also find a Mediterranean island that neither of them ever had anything to do with — the public really enjoys imagining things about Mediterranean islands. It would also be nice to tie the whole deal to the Kennedys; that would be so good that we'd use it even if it were true. At this end we've contacted Actor's Equity to send us some life-long friends to denounce Howard publicly, and we've arranged for a few glamorous exwives and are holding auditions for the Other Woman — Vanessa Redgrave may be available, although we're rather hoping for Royalty.
"So we just want you to know how much we're counting on you, J. Edgar — we're trying for the biggest fake ever. We've already sold the serial rights to *Grime, Rife*, and the new Fake-of-the-Month Club, and TV rights to the Mission: Mendacity series. Now, remember, we're depending on you for good communications and co-ordination with us on this: we have to know just where we stand. The prestige of the entire communications media is depending on us today. OK, keep in touch."

RECORD SALE
To announce our new record department — the Caltech Bookstore is selling 100's of Records at \$1.39

Bach	Cher
Beethoven	Jackie DeSharon
Tchaikovsky	Vikki Carr
Saint-Saëns	Ferrante & Teicher
Debussy	The Turtles
Berlioz	O. C. Smith
Handel	The Ventures
Schubert	Bobby Goldsboro

Also now available at reduced prices Your favorite Popular and Classical selections

Black Oak Arkansas	Ravel
Led Zeppelin	Buxtehude
Bread	Scarlatti
Faces	Handel
Cat Stevens	Vivaldi
Superstar	Sibelius
Chicago	Bach
David Cassidy	Mozart
The Osmonds	Grieg

ARETHA FRANKLIN
YOUNG, GIFTED AND BLACK
Atlantic SD 7213

Desiderata
Les Crane

faces
A nod is as good as a wink... to a blind horse.
Includes: STAY WITH ME / DEBRIS / MISS JUDY'S FARM / THAT'S ALL YOU NEED
Warner Bros. album BS 2574

BLACK OAK ARKANSAS
KEEP THE FAITH
Atco SD 33-381

bread
Make Me Smile
Capitol SD 33-381

CALTECH BOOKSTORE
WINNETT STUDENT CENTER

"WONDERFUL TO SEE . . . one of the year's handsomest and most romantic pieces of movie-making."
—CHARLES CHAMPLIN
L.A. TIMES

julie CHRISTIE / ALAN BATES
THE GO-BETWEEN

CO-FEATURE
"BEST PICTURE OF THE YEAR"
National Society of Film Critics

COLUMBIA PICTURES PRESENTS
JEAN-CLAUDE BRIALY
ERIC ROHMER
CLAIRE'S KNEE
Color DOLBY GP

COMING: MARCH 1
"SUCH GOOD FRIENDS"
MARCH 15
"Sometimes a Great Notion"

THE Esquire
A Laemmle Theatre
2670 E. Colorado
SY 3-6149—MU 4-1774

EUROPE 1972
CHARTER FLIGHTS
SPRING-SUMMER-FALL
SCHEDULES NOW AVAILABLE
Many Flights to Choose From
SAMPLE FARES
LONDON — \$269
Roundtrip
LONDON from \$129
One Way
Low Air Fare on
Inter-European Flights
ISRAEL—AFRICA—ASIA
International I.D. Card Available
Attention group Leaders:
Special flights arrangement for
small or large groups — ask for
details. For Information, Schedules, Reservations CALL OR
WRITE
CHARTER FLIGHTS INT.
995 MARKET STREET
SAN FRANCISCO, CALIF. 94103
PHONE (415) 392-8513

Computers May Just Yet Talk Back to Us Humans

Continued from Page One
formant synthesis. In direct imitation, either the mechanical structure or the electronic circuit is arranged to simulate the structures of the human vocal system. For example, some parts imitate the vocal chords, others the action of the tongue or lips, and still others the nasal cavity. Formant synthesis makes use of properties of the human voice itself. The vocal chords vibrate at one fundamental frequency, which can be changed by changing the tension on them, but also produce an abundance of overtones or harmonics. The throat, mouth, and so on act as a resonator which attenuates some of these overtone frequencies and accentuates others. Apparently, the resonator part of the vocal system accentuates three frequencies. Which three frequencies are accentuated depends on the shape of the resonator, which obviously can be changed by moving the tongue, lips, etc.

Or to Emulate

A formant synthesizer employs three oscillators which can be adjusted appropriately to simulate vowel sounds. Other sounds, such as the sibilants "s" and "sh" are handled by special circuits. Plosive consonants, such as "p" and "k" also have their own special circuitry.

In recent experiments, formant synthesizers as just described have been hooked up to computers. The computer sends commands signals to the synthesizer, which hopefully creates intelligible sounds. The power and flexibility of computers have enabled a group at Bell Labs to feed in a written text and have the computer read it aloud.

Pierce proved this with tape recordings of a computer reading from Grimm's Fairy Tales. He even included a tape of a computer accompanying itself singing "Daisy, Daisy."

Hello? What's There?

According to Pierce, computerized speaking machines will have important applications in

the near future. Already useful in linguistic research, talking computers may prove useful in helping the handicapped communicate (for example, reading to the blind) and in many applications by giving spoken information to humans.

In the near future, the voice that answers your telephone may be a computer. But will singing computers ever be able to compete with humans, with the great Caruso? According to Pierce, "only time will tell."

Ed. Note — Readers wishing more information are directed to the article on speaking machines in the February 1972 issue of Scientific American.

Graduate Fellowship Competition Announced

The California State Scholarship and Loan Commission announces the opening of the competition for the new State Graduate Fellowship Program with the distribution of applications to every California college, graduate school, and professional school.

State Graduate Fellowships are for tuition and fees at California graduate or professional schools and are designed to assist in the development of the talents of able students in graduate and professional education.

Approximately 740 fellowships will be available for the 1972-73 academic year and available for graduate degree work in the sciences, social sciences, humanities, the arts, mathematics, engineering, business, education and professional degrees in law, medicine, and other fields, at the discretion of the Commission.

Applications must be filed with the State Scholarship and Loan Commission by April 3, 1972. Announcement of winners will be on June 1, 1972. All fellowship applicants will be

Preregistrations

New Courses Divulged

by Schroedlu

In case you hadn't noticed, this coming week is pre-registration week for third term (yes, already). So we hereby bring you as a public service some capsule comments on some of the elective course offerings available to you.

The coming term features several surprises, unpredicted even by all you diligent readers of the course listings in the CIT Bulletin. Dr. John R. Pierce, Tech's distinguished escapee from Ma Bell, is offering a course designed to delight the hearts of all you electronics trolls, **EE 61, Waves**. (That's the full title.) The course is described as primarily for undergraduates (with a number under 100, won't it be exclusively for undergraduates?), requiring

relatively little math, covering coupling, spatial harmonics, momentum, waves in moving media, antennas and diffraction, for EM waves, acoustic waves, and others as well. Reports indicate that this course could be a winner.

Quark

A new effort is being made by a team of economists, Drs. Davis, Grether, and Quirk, **Ec 119, Urban Economic Problems**. Among the topics planned for this course are location theory, urban health delivery systems (now a concern at JPL as well) and housing problems (presumably not of Caltech undergrads. Sorry). The effects of income distribution on housing and job patterns will also be studied. Another redesigned econ course is Dr. Oliver's **Ec 117, Problems of Urban Society**. Dr. Oliver has had experience as a member of the Pasadena City Council, so his comments on urban administration should be especially relevant. The course will focus on Pasadena, especially its educational system and land use patterns, and will not be a standard lecture course, but instead feature outside speakers and student participation.

Another new course, which is listed under both history and philosophy, is **Alternate Life Styles**, under the direction of Drs. Rosenstone and Hertz. Among the life styles to be discussed are the scientific, mystic, artistic, rural and communal. Dr. Rosenstone tells me that the course won't be entirely theoretical, although adopting one of the life styles discussed won't be necessary. There will be readings on actual experiments in the various life styles.

Continued on Page Seven

Letters Continue To Pour In On Dabney Incident

Continued from Page Two

In closing, it is my belief that the only person who should have originally spoken up about the events in Dabney was Dr. Hunter himself, since he was the injured party, if there were any. I also feel that the reasons for the so-called psychodrama are far more important than the event itself, and it appears that Dr. Hunter is making a great effort to look into those reasons, and for that I must applaud him.

Sincerely yours,
Nick Smith

Dear Tech Editors,

About the drop-day date.

I can well understand that no student wants to be held in a course in which he feels he is making no headway.

On the other hand, no instructor wants to drudge over a bunch of papers and exams (that's what reading them is) if, as it turns out, the student he's doing it for (or do you suppose he does it to gratify himself?) is indifferent and may, in fact, quit before he can turn them back.

Maybe we need a frank and equal bargaining arrangement.

Let the student drop the instructor ("dropping a course" is really just a euphemism for that) any time through exam week.

And let the instructor drop the student any time through exam week.

Neither, of course, required to show cause.

—Peter Fay

Interhouse Sing

Continued from Page One

Clark's "Singing Scientists" examining life at Caltech, Art Johnson doing Tom Lehrer parodies, and the glee club performing Ogden Nash's "Essays on Women" set to music.

Interhouse Sing happens tomorrow night at 7:30 in Ramo Auditorium. Although at first glance this appears to conflict with the ASCIT movie "Patton", IHS will be over in time for the second showing, so plan to attend — besides, it's free.

**College Student
Insurance Service**
for outstanding values in
**AUTO,
MOTORCYCLE,
PERSONAL PROPERTY,
and LIFE INSURANCE**
(terrific!)

3025 Valley, Alhambra
576-7901

**THE ASCIT FRIDAY NIGHT MOVIE
THIS WEEK:**

PATTON

WINNER OF 7 ACADEMY AWARDS

Starring: GEORGE C. SCOTT

Friday, February 18, 7:30 AND 10:30 p.m.

in BAXTER LECTURE HALL

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

NEXT WEEK:

IPRESS FILE

**RON TAYLOR
CARPETS**

1162 E. Colorado Pasadena
793-3244

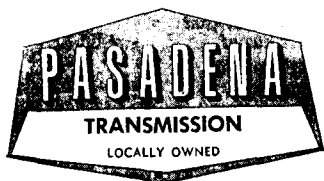
**LOOKING
FOR
CARPET?**

Contractors, Apartment and Home
owners carpet in stock

From **1.99**
SQ YARD
Plush Shag, Hi-Lo
Tweed Shag, Heavy
Nylon, Commercial.
**WE HANDLE ALL
THE LEADING
BRANDS.**

We challenge the lowest price you have
on carpet and draperies

R Hundreds
E from car
M size (Black
N shag) to the
A largest room
N size
T
S **ALL COLORS
ALL SIZES
FINANCING NO
PROBLEM. UP
TO 36 MONTHS**



AUTOMATIC TRANSMISSION SPECIALISTS

792-6104

26 N. Hill (at Colorado)

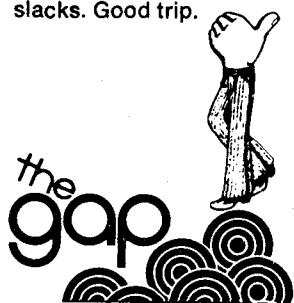
PASADENA

10% discount to all Caltech students and faculty

EXTREMELY LARGE STOCK • Evenings 'til 10
**PICKWICK
BOOKSHOPS**
6743 Hollywood Bl., Hollywood
(213) HO 9-8191 • CR 5-8191
Topanga Plaza, Canoga Park
(213) 883-8191

**Take
a
Levi's
trip.**

Make it to the Gap.
For the Area's
greatest selection of
Levi's®. Over 4 tons per
store. Levi's—that's all we
carry. From Levi's for
Gals®. To Levi's Sta-Prest®
slacks. Good trip.



Pasadena
Lake Ave. and
California Blvd.
Phone: 795-7711
Open Daily 10 to 9, Sunday 12 to 5



Swimmers Nipped in Last Event by Pomona 62-51

by Bob Kieckhefer

Last Friday's swimming meet at Pomona was not decided until the final relay had been swum; Pomona took the relay and hence won its first aquatic event against Tech in a long time. Strategy played a major role in the meet, with Pomona evidently second-guessing us better than we could read their minds.

This meet marked the return of Steve Sheffield and Bob Coleman to the team; they led Tech's medley relay team to a victory to give Tech a 7-0 lead at the start of the meet. Wins by Tim Hight in the 1000-yard freestyle and Sheffield in the 200-yard freestyle widened Tech's lead to 18-7 before Pomona's sprinters started narrowing the gap.

Two events later, Tech's lead was only 22-21. Diver Greg Beall performed well off both boards, and his two first places put Tech 3 points ahead. Pomona tied the score with a victory in the 200-yard butterfly, but

Sheffield's victory in the 100-yard freestyle soon put Tech back on top, 40-39.

Pomona won the next three races, however, giving them a 55-51 lead going into the final event, the 400-yard freestyle relay. The lead was meaningless, however, as the winner of the relay would receive 7 points and the victory. Pomona grabbed an early lead in the relay and held on to win by about five yards, giving them the meet, 62-51.

Steve Sheffield led Tech with 11 1/4 points in the losing effort; other high scorers were Greg Beall (10 points), Tim Hight (8) and Bob Coleman (7 1/4).

Yesterday afternoon the swimmers took on Santa Ana JC, with hopes of scoring their second victory of the season. Tomorrow at 4 p.m. they will host Redlands in a dual meet, again with a good chance for a victory. Come on down to the pool and cheer them on! (You weren't planning on *snaking* on a Friday afternoon, were you?).

The Sports Beat

"Set It Up, Frosh!"

Interhouse volleyball practice begins Monday in preparation for the fifth scheduled clash of the year. Competition will run from February 29 to March 8. The current leaders, Page House, would have to finish fourth in order to relinquish their lead — and then only if the second-place House, Ruddock, comes in first. In last year's volleyball, Page and Ruddock finished one-two.

The AMa six-man football team has found competition. This Sunday Ricketts House is rising to the challenge. Come and see all the pretty blood.

Tickets are now on sale for the Kings-Bruins ice hockey game on February 26, courtesy of the Y. Normally \$4.25, they're selling for \$2.25 to faculty, staff, and students.

Tech's wrestlers go for their third consecutive S.C.I.A.C. title Saturday in Brown Gym. Admission is free, and the entire

Caltech community is invited to support their team.

Track begins its season in the conference relays, Saturday afternoon on the Redlands U. track ... Baseball faces Rio Hondo in an away game next week in their premiere ... Conversely, basketball finishes their '72 campaign with a game against La Verne here on Friday night and at Whittier on Saturday.

The tennis team is looking for managers. All interested parties should apply immediately, if not sooner.

By the way, it's been sixteen weeks since we last ran a sports photo.

Late Score:
Swimming
Caltech: 55
Santa Ana: 48



EN GARDE! Five members of the Caltech women's foil team show the Musketeer spirit of "All for one, and one for all!" Pictured from left are Debbie Mielke, Ann Clemmens, Janet Wainwright, Mary Beth Ogilvie, and Marie Beall.

Fencing Team Shows Finesse, Style, Victories

Caltech's superb men's foil team enters the Northern Division Championships Saturday, seeking to extend their fine season record.

Team captain D.A. Smith, Bill Chia, and Larry November make up the elite squad that has lost only two close matches this year.

Also competing will be the men's saber and epee teams, and the women's foil team. This year is the first year that women have been allowed to compete in this intercollegiate sport. The team's coach is Delmar Calvert, who has coached the U.S. contingent to the Pan-American games.

ICE HOCKEY Meeting Tonight

There will be another organizational meeting of the Caltech Hockey Club tonight at 8 p.m. in Clubroom 1. Anyone associated with Caltech is invited to attend.

Courses

Continued from Page Six

Another brand-new course even has a brand-new course grouping all to itself: an Art course, **Art 101, Art and Technology**, with Elsa Garmire, Caltech's expert in laser art. The course is united 3-3-3, providing an opportunity to all you lab nuts.

Election Results from Page One

IHC Chairman: Rick Martin
BOC Secretary: Bryan Jack
Social Chairman: John Lehmann
Athletic Managers: John Denker and Rik Smoody
Activities Chairman: Steve Kelem

Continued Elsewhere on Page

Horsehiders Start Play

by Furdrick J. Furd III

Caltech's varsity baseball team will kick off its season this Tuesday with a game against Rio Hondo. Last year the Beavers were narrowly defeated 4-3 by Rio Hondo in a scrimmage game, so the season's opener should prove to be a thriller. Although most of last year's team has graduated or left Tech, returning starters Bob Pleva and Phil Gschwend will provide a strong nucleus for the infield.

Doug Schladweilder, a lefty frosh with both power at bat and

prowness of glove, will take Ken Hanson's place at first. Walt Smansky, one of the best prospective players on the team, will probably start as catcher but will aid the team with occasional pitching. At this time either Steve Schnetzer or John Ellis will play at third. The pitching staff will consist of Cliff Brown, Ellis, Gschwend, Richard Mitchell, and Smansky. Playing the outfield will be Brown, Al Meyer, Mitchell, Jack Stemple, and John Tristano. All positions are subject to change without notice.

Same Olde Sports Menu

Thursday, February 17			
3:00 p.m.	Varsity Tennis	Occidental	Away
3:00 p.m.	JV Tennis	Occidental	Home
Friday, February 18			
12:30 p.m.	Golf	Cal State Dominguez Hills, Pasadena College	at Brookside
4:00 p.m.	Swimming	Redlands	Home
6:30 p.m.	JV Basketball	La Verne	Home
8:30 p.m.	Varsity Basketball	La Verne	Home
Saturday, February 19			
11:00 a.m.	S.C.I.A.C. All-Conference Wrestling Tournament		at Caltech
9:00 a.m.	Fencing	Northern Division Championship at San Fernando Valley State College	
1:00 p.m.	Track	S.C.I.A.C. Relays	at Redlands
1:30 p.m.	JV Tennis	Redlands	Away
1:30 p.m.	Varsity Tennis	Redlands	Home
6:30 p.m.	JV Basketball	Whittier	Away
8:30 p.m.	Varsity Basketball	Whittier	Away
Monday, February 21			
12:30 p.m.	Golf	Occidental	Home
Tuesday, February 22			
3:00 p.m.	Baseball	Rio Hondo	Home
3:00 p.m.	JV Tennis	Whittier	Away
3:00 p.m.	Varsity Tennis	Whittier	Home
Friday, February 25			
12:30 p.m.	Golf	Claremont-Mudd	Away
4:00 p.m.	Swimming	Chapman	Home
Saturday, February 26			
8:00 a.m.	NAIA District III Wrestling Championships		at Pasadena College
12:01 p.m.	Baseball	L.I.F.E. (Doubleheader)	Away
1:30 p.m.	JV Tennis	Claremont/Harvey Mudd	Home
1:30 p.m.	Varsity Tennis	Claremont/Harvey Mudd	Away
1:30 p.m.	Track	Claremont/Harvey Mudd	Away

NOW THRU FEB. 20

COUNTRY JOE McDONALD

AND

SANDY DENNY

COMING NEXT

DONNY HATHAWAY

DOUG WESTON'S

Troubadour

9081 SANTA MONICA BLVD., L.A. 276-6168

COCKTAILS • DINNERS • HOOT MONDAYS • NO AGE LIMIT

CHANDLER'S

PRESCRIPTION PHARMACY

Special Consideration to Caltech People

Page E. Golsan III, Pharm. D.

Free Delivery

1058 E. Green Street (Corner Green & Wilson) 792-2211

185 S. Euclid Avenue 793-0607

Pasadena, California

California Tech Editors: Peter Beckman, Gavin Claypool, and Jeff Mallory

PAT'S LIQUORS AND DELICATESSEN

1072 E. Colorado 796-6761

Open to midnight daily, 1 a.m. Fri. & Sat.

Keg Beer Party Supplies

NEWS BRIEFS

ASCIT Car Rally Rally

Registration for the ASCIT Searchlight Search Car Rally will be at the Tournament Park parking lot from 6-7:30 p.m. this Saturday. The rally will be followed by a little shindig at Winnett Center starting at 11:00.

Get your motor running.

ASCITYMCA Thumb Twiddlers

Those involved in the ASCITYMCA hitch hiking trip will be leaving early February 26, and meeting together up at Big Sur. Get your thumbs in shape.

Petition Signing Party

McGovern supporters are in-

vited to a petition signing party to help place Senator McGovern on the primary ballot this Tuesday night in Winnett Clubroom #1. It will start at 10 p.m. and will last until after midnight. (Petitions cannot be signed until midnight.) Persons interested in coming should confirm with David White (795-6841 ext. 2030.)

Feynman Wins!

Richard Feynman has won the 1971 Oersted Medal of the American Association of Physics Teachers for "notable contributions to the teaching of physics."

Med School Seminars Set for Next Week

Dr. Donald L. Stilwell, M.D., of the School of Medicine of Stanford University, will speak to all interested persons on the topic of "How to get into Medical School" on Thursday (24 February) at 3:00 p.m. in 147

Noyes. Dr. Stilwell is chief pre-medical adviser at Stanford and served for several years on the Admissions Committee of the Stanford University School of Medicine.

After his seminar, Dr. Stilwell will answer personal questions from students who hope to begin medical school in 1973.

New State Fellowship Program Announced

The present California State Graduate Fellowship Program, which has been discontinued, will be replaced by a "new" program for the 1972-73 academic year. Depending on financial need these awards may go as high as full tuition and fees.

Students who are on the "old" program may apply competitively for the "new" program. To be eligible a student must be a U.S. citizen or living in the U.S. on a Permanent

Residence Visa. It is necessary that the student will have lived in California for a period of one year as of the beginning of school next fall.

In view of the uncertainties of graduate student financial support for next year, all eligible graduate students who will be enrolled for 1972-73 are urged to make application. Applications must be submitted to option representatives by March 13, and forwarded to the Graduate Office by March 17. Additional information is available from option representatives. Application forms are available in the Graduate Office, 216 Throop.

North ΦBK Visiting Scholar

Dr. Wheeler J. North, professor of environmental science, has been named as a Phi Beta Kappa Visiting Scholar for 1972-73. The scholars will spend two or three

days with undergraduates at various institutions, lecturing and leading informal discussions.

Marine biologist North has pioneered in restoring the kelp forests along parts of the Southern California coast. In addition to raising kelp spores and transplanting them in ocean beds, he also serves as a consultant to governmental agencies on problems of marine ecology.

AMATEUR RADIO CLUB MEETING

The Radio Club will have a meeting Wednesday, February 23 at 7:30 P.M. in Clubroom Two.

Classified Ads

TRAVEL

Charters for Caltech, JPL

Open to students, faculty, staff. For information call Dr. Mandel, 476-4543.

EUROPE CHARTERS

50 departures, also from New York. India-Africa-Israel. 60% off. Free info: EASC, 323 No. Beverly Dr., Beverly Hills, CA 90210. Phone: 276-6293.

EUROPE - ISRAEL - EAST AFRICA. One way and round trip student flights. Inexpensive student camping tours through-out West and East Europe, including Russia. SOFA agent for inter-European student charter flights. Contact: ISCA, 11687 San Vincente Blvd., Suite 4, L.A., CA 90049. Tel: (213) 826-5669.

HELP WANTED

Australia, Needs Teachers Now! Sick of Hassling Smog, Unemployment? Growing Needs, All Subject Areas. For Full Info. Send \$1 to: Intl. Teachers Placement Bureau, P.O. Box 19007, Sacramento CA 95819.

SERVICES

Expert typist available. Will type anything, technical reports, term papers, theses, etc. Reasonable fee. 798-5637 evenings. Ask for Mary.

Buying or selling something? You, too, can take out an ad in the *California Tech*!!! \$1.50 per inch plus 20¢ per extra line for Classifieds. Bring ad copy to the *Tech* office, or phone ext. 2154. O.K.?

Get to know the two of you before you become the three of you.

Get to know what you both really like.

What you both really want out of life.

Get to enjoy your freedom together until you both decide you want to let go of a little bit of it.

But make it your choice.

Research statistics show that more than half of all the pregnancies each year are accidental. Too many of them, to couples who thought they knew all about family planning methods.

Get to know how the two of you don't have to become the three of you.

Or the four of you. Or...

For further information, write Planned Parenthood, Box 431, Radio City Station, New York, N.Y. 10019.



Photo by Menken/Seltzer

Planned Parenthood
Children by choice. Not chance.

Planned Parenthood is a national, non-profit organization dedicated to providing information and effective means of family planning to all who want and need it.



advertising contributed for the public good

Second Class Postage paid at Pasadena, California. The *California Tech* is published weekly except during exams and vacation periods by the Associated Students of the California Institute of Technology, Inc., Winnett Center 105-51, California Institute of Technology, 1201 E. California Blvd., Pasadena, CA 91109. Subscriptions: \$4.00 per year.