

IHC Fines Ruddock Two Showerheads

by Shmuel Schmuckputz

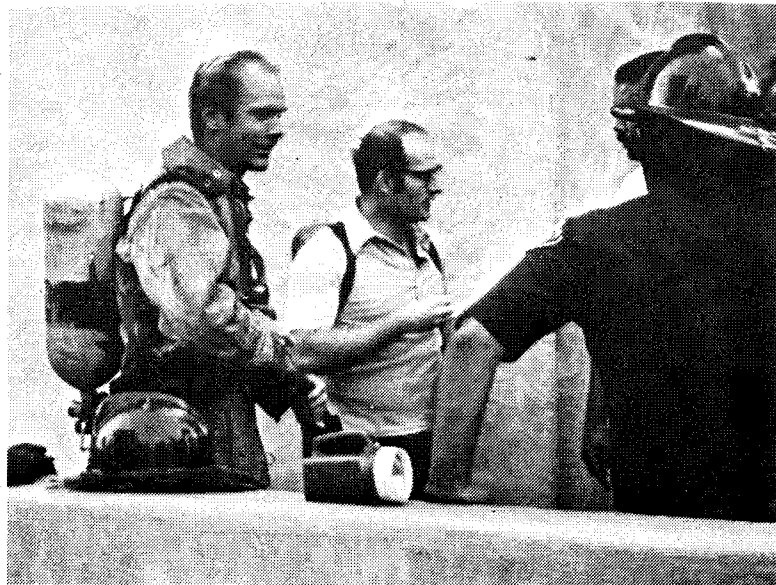
Wednesday's IHC meeting saw a visit from Dan Dyo of the Pasadena YMCA to ask the house presidents to announce to their houses the need for volunteers for the Big Braves program, which provides first- to third-graders with an older male to compensate somewhat for their nonexistent fathers. The program demands only four to six hours a month. Interested persons should get in touch with their presidents.

Also at that meeting came a censuring of two persons in Ruddock for at least three separate occasions of hard-sell attempts to persuade certain freshmen in other houses to move into Ruddock. In addition, the IHC recommended that next year's rotation draft work as it did this year, but with all freshmen, regardless of sex, being placed in the same pool.

The IHC decided to take on the task of trying and punishing those who rip off food service, since the BOC cannot quite cover enforcement in that area; ripping off food service apparently is not a direct enough assault on the other members of the Caltech community. To be discussed at the next meeting is the extent of the IHC's power with regard to punishments.

The house presidents will this week post expressions of student unhappiness about the cut in Health Center hours for those with such feelings to sign. These petitions will be collected and passed on to the administration along with a letter yet to be drafted concerning the manner in which the change in hours was decided.

Finally, anyone knowing the whereabouts of two Ruddock showerheads should get them back to Ruddock as soon as possible.



GERALD WARD (center) confers with firemen after an accident in his lab filled portions of Spaulding Laboratory with lethal fumes. Photo by R. Gruner

Lethal Fumes in Lab ; Reaction Goes Too Far

by James Llewellyn

Spaulding Laboratory was the scene for a possibly dangerous mishap yesterday evening, October 17, when an unwatched chemical process over-reacted and filled a portion of the building with possibly lethal gases. Four Pasadena Fire Department vehicles responded at approximately 6:20 p.m. to the east end of Spaulding in an attempt to contain the fumes.

Gerald Ward, a graduate student stated that he had left some

polyethylene oxide diisocyanate, an intermediate product in his experiment, on a heat mantle and apparently he either set the temperature too high, or it had short circuited. This caused the flask containing the chemical to break, allowing it to react with water vapor in the air, and with itself internally, forming free isocyanate, carbon monoxide, nitrogen dioxide, and traces of cyanide gas, all lethal.

The situation was brought under control when Ward and two Pasadena firemen entered the building wearing gas masks. The chemical was quickly placed in a hood and covered with ammonia.

"The lab will smell for a day, but there are no problems now. The air conditioner can handle it," stated Ward after returning from his lab.

No serious injuries were reported, although Caltech Security Officer Dick Bazzel complained of a "woozy" feeling, and reported to Huntington under his own power.

A serious injury could have occurred when Caltech Physical Plant employee Ted Wiley entered Spaulding with a gas mask case from Noyes only to discover that the mask had been removed by person or persons unknown.

After it was all over, Ward was heard to say, "Let's go shoot some pool now"

Who'd Listen To Us?

Techer Considers Life Beyond

by Alan Silverstein

In a sweeping, eloquent approach to the question of extraterrestrial intelligence, Dr. Bernard Oliver, Hewlett-Packard Research and Development Vice President and Caltech graduate, presented this season's first Watson Lecture Monday night at Beckman Auditorium. The topic he discussed generated such popular interest that at the scheduled 8 p.m. starting time the auditorium was full to capacity and there was a line outside stretching all the way to Gates. Nonetheless, Dr. Oliver's speech was so fascinating that nearly all those present stayed to listen to it on the outside speakers.

The lecture began with a broad overview of the theorized Big-Bang creation of the cosmos. Dr. Oliver emphasized that theories on the subject have been changed and expanded radically in the last few decades and that we are even now uncertain of many of the details. He followed the primordial fireball through stellar precipitation and ignition of the Population II (lighter

element) stars, then explained the formation of second generation Population I stars with their accompanying heavy element planets.

Ten Billion Life Sites

Looking at our own solar system as an example Dr. Oliver showed that the field of stars possibly inhabited with what we would recognize as life is narrowed considerably upon taking into consideration star type, planet size in relation to volcanic origin of the hydrosphere and lithosphere, and orbital radius, which affects tidal forces and solar wind strength. Locally, only the earth and Venus were fully bio-possible, and only on this planet did green algae convert volcanic CO₂ into oxygen and carbon (the latter being found mostly in limestone today). The primitive atmosphere of methane and ammonia created amino acids, then the replicating proteins, and this created-life reshaped the surface of the planet to the biosphere it is today.

The lecturer spent a good portion of his time laying the

preceding groundwork without directly discussing the possibility of extraterrestrial life. Having done so, however, he then pointed out that "there isn't anything (in what I have discussed)...that is peculiar to earth." Not every star is a good sun, he explained, and not every planet is a good earth, but he estimates there are or were ten billion "life sites" in the universe.

Getting in Touch

Dr. Oliver now began to discuss intelligent life in the universe; specifically, whether or not they are out there, and if so, how to contact them. Here the first and about the only large uncertainty in the problem became apparent. It is necessary for inter-species contacts that the two sides be living simultaneously, but the density of civilized planets depends heavily on the longevity of the typical intelligent species. Dr. Oliver optimistically put the average lifetime of an intelligent species at a billion years, saying that we could consider ourselves a successful species if we make it that long.

On that basis he estimates that at any given time there are a billion civilizations in the universe; i.e. about one for each year of typical longevity. More-

Continued on Page Three

News Briefs

ASCIT Compresses Beatty

The Ascit Bod had a profoundly significant meeting last Friday. Nominations for Secretary were opened (sign up on Flora's door in Winnett), and adjournment was decided upon. Students can rest assured that no action is being taken that could possibly take advantage of their \$22 per annum investment in this fine corporation. (The preceding was an unpaid snide remark.)

Eat Jelly Doughnuts

Starting Thursday, Oct. 24, free doughnuts will appear in Flora's office in Winnett at 4:15 p.m.

Earn Jelly Money

Two jobs in Winnett Center

are open: Gameroom Chairman, and Garage Chairman. The pay is \$60 per term. See Flora if you are interested.

Strange Social Event Happens

Would you like to score with 13 cute little tricks? Would you like to know how to squeeze people with a great deal of finesse? Come to bridge club Saturday at 7 p.m. in Winnett. Beginners are welcome.

Going Up For Fresh Air

Clean air, clean dirt, and good clean fun: Go climb a hill. Day hike this Saturday, October 19, in The Mountains You Can't Usually See. Bring your feet (with shoes), lunch, 1 qt. water, and gas money, to the Athenium

parking lot at 9:00 a.m. Cars needed. Sponsored by C.E.A.C.

Take a Seat Sit on Your Grass

Y Noon Concert today on the plaza, featuring sophs Bill Dower and Jim Brubaker. Bring your own lunch.

Guitar Returns To Winnett

The Caltech-P.C.C. Newman Community will resume its weekly guitar masses this Sunday night at 7:30 p.m. in Winnett Lounge. All are invited, bring a friend.

Womens' Sports...

The gym will be available Tuesday and Thursday nights
Continued on Page Seven

**TODAY
IS
ADD DAY**



SPECTACULAR action during water polo game last week. Photo by G. Bone

Try, Try, Again

Staff To Be Chopped

by Dick O'Malley

Utilizing an incredible distractional ploy, the editors of *The California Tech* are giving autonomy to three subordinary editors and departmentalizing the staff. The division of labor will be taking place this afternoon (i.e. 12:01 p.m.) in 128 Baxter. Anyone interested in any aspect of newspaper work or in getting three units of credit should show up at the appropriate time and place.

Asked to comment on the new organizational procedures, the senior editor stated "We figure Simay should be able to suck off a couple of frosh for his features work. If we throw four

or five into sports writing and give Harcourt as many as he thinks he needs (assuming, of course, that the staff is willing to commit itself) that should still leave enough for actual news and eliminate having to worry about those three sections."

What this means, in short, is that *The Tech* is about to turn into a systat organization controlled and operated by a network of editors linked to a central command coordinator. Anyone interested in getting in on the ground floor or running himself up the flagpole to see if anyone will salute should definitely show up. Time and place again: 12 noon, 128 Baxter.

California Studs Offered Free Money

Undergraduate college students who will require financial assistance to continue college in 1975-76 are invited to file a State Scholarship application. Approximately 13,485 new State Scholarships will be awarded in March 1975 for use in 1975-76. Although a majority of the new scholarships will be awarded to high school seniors, it is anticipated that some 2,700 awards will be available for currently enrolled college students who are

not already in the State Scholarship Program.

State Scholarships may be used at any four-year or two-year college which is accredited or is a candidate for accreditation by the Western Association of Schools and Colleges. The new awards will range from \$500 to \$2500 at independent colleges, \$300 to \$600 at the University of California, and are in the amount of fees charged to students at the California State

University and Colleges (approximately \$182). Since the program is limited to tuition and fees, no payments are made for students who attend community college until they complete their education at a community college and transfer to a four-year college. Students planning to attend a community college during the 1975-76 academic year may have their scholarships held in reserve for them until such a time as they attend a four-year college. Applicants are no longer required to be below a specific age to apply.

Applications are available in the Financial Aid Office of every California college or directly from the State Scholarship and Loan Commission, 1410 Fifth Street, Sacramento, California 95124. Applications must be filed with the State Scholarship and Loan Commission by midnight, November 22, 1974, and a 1975-76 Parents' Confidential Statement must be filed with the College Scholarship Service by midnight, December 13, 1974. All applicants must complete the Scholastic Aptitude Test no later than December 7, 1974 to be considered. Scores from Scholastic Aptitude Test examinations completed in prior years will be accepted.

Worst Is Yet To Come! Shoot Up Early For Flu

Flu inoculations will be offered to all members of the Caltech community on Friday, October 25, between the hours of 10:00 am-Noon and 1:30-5:00 pm at the Health Center. To avoid delay in receiving inoculations, scheduling will be arranged by the Personnel Department in cooperation with the Health Center. Your supervisor or division secretary will advise you as to the exact time. After October 18, any rescheduling should be made through the Health Center by calling extension 2394. Depending on the response, we may need to schedule an additional day for

inoculations. The Department of Health, Education, and Welfare advises that a highly purified influenza vaccine is available for the 1974-1975 "flu season." This vaccine will provide the maximum protection available against influenza, with a minimum chance of reactions.

Based on a recent recommendation from the Department of Health, Education and Welfare, only one inoculation is recommended. The charge will be \$2.00 for each person, payable at the Health Center. There will be no charge for students presenting their identification cards.

THE CALTECH FORUM

An Open Response from President Brown

Dear Pericles,

I appreciate horror stories, especially when they are as well written as yours. However, I would hate to think that Caltech is sinking into a bureaucratic morass. But it would be even worse personally to reorganize the registration procedures, or trying personally to collect all the unpaid bills (and they are many) that are left at the Institute. At the risk of proving that you're right—that bureaucracy is here to stay—I have referred your letter to Messrs. Pings, Huntley and Morrisroe for action on the respective issues.

Professor Pings and others tell

me that there was indeed severe confusion and inconvenience to many graduate students at registration. He has taken steps to revise procedures to minimize the likelihood of a recurrence at subsequent registrations.

The problem of overdue bills is another matter. Caltech has delinquent accounts, including bills, loans, etc., amounting to about \$100,000. If you can devise and prove successful a

different procedure for collecting overdue bills due Caltech, we will be glad to substitute it for our present one.

Since yours was published as an "open letter", I am passing a copy of this reply to *The Tech* for publication as well.

With best personal wishes, and in continued friendship.

Sincerely yours,
Harold Brown

Trying To Clean Up Act

by James Llewellyn

There exists on campus an organization which is fighting to help alleviate one of the pressing problems facing us today: trying to breathe the Pasadena air. The Clean Air Car Project (CACP) is Caltech's attempt to help solve this crisis.

The Caltech Clean Air Car Project was established in 1970 as the result of a challenge by M.I.T. to a clean air car race from Boston to Pasadena. Nearly 60 other schools participated, competing against Caltech's two entrants, a Ford Ranchero and an AMC Hornet.

Thus started a string of more clean air car rallies, including the annual UC Davis Reduced Emissions Device (RED) Rally, which was co-sponsored by Caltech in 1974.

The cars that CACP plans to enter into the 1975 RED Rally are very much different in the basic principles of pollution control behind them. In 1972 the idea was to convert the engines to accept propane as a replacement for gasoline. This concept was dropped when the CACP's goal of having a low-emission, yet driveable car that was economical could not be met. The current line of attack is to try to atomize the gasoline in order to promote more efficient burning.

The CACP motor-vehicle testing laboratory is well-equipped with some of the latest emission-testing devices. The lab can

reproduce any of the current Environmental Protection Agency's emissions tests. Funds for this come from donations and loans from various interested individuals and corporations.

Drive a Datsun...

The Caltech CACP is internationally known, and its opinion is widely respected. The project has reported many times to the State and Federal Governments on the effects of pollution control devices and their usefulness. One recent CACP manager was offered a job on the staff of the California Air Resources Board immediately after graduation, and the makers of Datsun are in the process of loaning CACP a car for six months to see what improvements they can make on it.

The CACP welcomes queries
Continued on Page Six

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THE ASCIT FRIDAY NIGHT MOVIE IS ON SATURDAY THIS WEEK

Slaughterhouse-Five

7:30 p.m. & 9:30 p.m.
in Baxter Lecture Hall

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

NEXT WEEK:
"Beep-Beep"

FRANKLY SPEAKING... by phil frank



"ANYTHING EXCITING HAPPEN AT THE NUCLEAR POWER PLANT TODAY?"

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Get Tool Access - \$10

by Kutcha Fingerzoff

Have you ever needed a screwdriver at 4 a.m.? Considered building a set of speaker cabinets? Wanted to build a set of bunk beds, or a ditch day stack? If you have, then join the Student Shop!

The Caltech Student Shop is an organization devoted to such activities. It has both wood and metal working tools of both the power and hand varieties. These are available for use in the shop and most of them may be borrowed for outside work.

Absolutely no experience is necessary to join the Student Shop. All that is required is payment of the dues (\$5/year, and \$5 key deposit), and attendance at a check-in meeting. At this meeting, the rudiments of the machine operation are discussed, with special attention to operator safety and prevention of damage to the machines. The next such meeting, for those who are interested in joining the shop, will be Saturday, Oct. 19, at 2:00 p.m. The meeting will be held in the shop, which is right next to the game room in the basement of Winnett.

The student shop does not provide lessons in the use of the equipment; however, it does provide access to people who know what they are doing. If you would like to learn to use a metal lathe, for example, one of the shop committeemen could direct you to someone who knew how if he himself did not. This contact with other people with useful skills and similar interests is one of the most useful features of the shop.

If you are at all interested in

joining the shop, come to the meeting on October 19, look over the shop, and meet the committeemen. If you have any questions, contact Lou Scheffer, 223 Page.

History of Movies

by Dave Malone

Every Friday evening (except this week) the ASCIT Movie blazes forth full of sound and fury. This week it's *Slaughterhouse Five*, next week it's the first annual *Roadrunner Festival*. And standing behind it all is the ASCIT Activities Director, who, over the past several years, has brought such spectaculars as *M*A*S*H*, *2001: A Space Odyssey*, *Patton*, *War and Peace*, and *Fractured Flickers*.

Strangely enough, the movie program originated under the auspices of the now-defunct ASCIT Social Chairman's office which was then under the auspices of Craig Broskow (who can still be found rampaging on the football field), way back in the 1970-71 school year. Since then, with the help of a bylaws amendment, the Activities Director has held sole responsibility. The illustrious list of movie directors now includes Broskow ('71), Lee Kondor ('71-'72, '72-'73), Steve Kelem ('72), Ed O'Rourke ('73-'74), and Bob Loveman ('74). Who will be next? Only the movers of reality know for sure.

At any rate, Loveman continues to promise high quality flicks... as long as his budget

holds out. He refuses to tell us what's coming up, though.

The ASCIT movie can be found in Baxter Lecture Hall, which is in Baxter, which is right next to Beckman Auditorium, which is right next to Beckman Biology Building (Arnie), which looks exactly like Baxter, almost every Friday at 7:30 and 9:30 p.m.

Intelligence

Continued from Page One

over he pointed out that we come rather late in the probable-intelligence period, in that the first heavy elements were first used in star-formation ten billion years ago and were not greatly depleted until four billion years later, roughly where we came in. He thinks it likely that intelligent life has been around for several billions of years.

There Is TOO A Starship!

How then would we contact them? Dr. Oliver discarded interstellar travel almost out of hand due to the enormous energies, times and distances involved. Chemical rockets are useless, he explained. Then he argued that even with the best rockets avail-

Techies PRESENTS: A (ALMOST) TRUE "LIFE OFF CAMPUS" ADVENTURE!



Big T Looking For Fools

The Big T needs three assistant editors. Each assistant editor normally arranges a section in the yearbook and helps the editor put the yearbook together. Since the yearbook will be put together through the year, the work should take a few hours every week, but during the third term it may need more time. Each assistant editor is entitled to a salary of \$100.

Although previous experience

able within natural law, a perfectly efficient matter-antimatter annihilator ("don't ask me how we would make the fuel tanks"), interstellar travel is still out of the question because to take a 1,000-ton payload (enough for ten people) out for a decade of real time at 7/10 of c would require 33,000 tons of propellant or 3×10^{24} joules of energy, half a million year's worth of U.S. energy use at present rates. By current standards it's uneconomical, he said, but "perhaps it's a comfort because they can't get here?" (He absolutely rules out UFO's.)

Dr. Oliver feels that the only thing left to do is to look for intentional or accidental radio wave transmissions by extraterrestrials. The Cyclops program, with which he was involved, spent three months and \$100,000 on the question of how best to communicate with other civilizations and concluded the following: It would be better for obvious reasons to listen before trying to send messages, and the best place to listen would be in the microwave band. Specifically, he expressed a preference for a certain frequency range just below the 1.66 Ghz hydroxyl emission line and above a hydrogen line. In this range, which he calls the "water hole" because of the emission lines it lies between, the only radiation is the 2.7 K cosmic background noise of the Big Bang. In fact, Dr. Oliver believes that this region of the spectrum may already be used as the accepted interstellar communication band. He said that we now have the

should prove helpful, only interest in the yearbook is essential. Anyone interested should please contact Gul Agha (the editor) at the Housing annex or simply put a note in his mailbox at Winnett Center c/o Flora. Also, if anyone is participating in any other manner or has some suggestions, photographs, etc. please contact the editor. Your help will be welcome!

engineering capability to detect any non-random signal in the entire water hole in less than a thousand seconds, receiving only five photons per second per square mile, given a sufficient antenna system.

Antennae, not Bombs

At this point what was a relatively dispassionate lecture became emotionally charged to an extent. Dr. Oliver argued intensely for the construction over a period of twenty years of an enormous antenna system to put the Cyclops proposal into motion. He sounded somewhat farfetched to me as he expressed his belief that somewhere in the galaxy there is right now in existence an ancient, enormous pool of accumulated knowledge from many races of beings, just waiting for us to share in. This he called our "galactic heritage."

However, it was difficult to be too critical of his proposal because he built up a very good case. The lecturer gave many other reasons for the construction of the antenna system, including uses in radio astronomy and tracking space probes. If we did manage to contact other civilizations, chances are that we would learn a lot about the sciences and about other cultures that would help to insure our survival on earth. He said, "our rendezvous with destiny may depend on our contact with that life"—if they are there, and if we ourselves last long enough to make many two-way exchanges, each taking perhaps several generations at light speed.

It would cost only half a billion dollars a year, less than one percent of the U.S. defense budget, to build onto the system gradually for 10 to 20 years. Dr. Oliver indirectly attacked military spending because it does nothing for man except set him at odds with his fellow human beings. There's no doubt that at the end he was making a sales pitch—but his reasons were excellent, his logic sound, and the possible gains appealing.

Dr. Oliver remained for another fifteen minutes to answer questions from the audience, which were numerous. In closing his formal lecture he said, "Childhood's End may await us in the 'water hole'. I leave you to answer the final question."

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THE FINAL ANALYSIS

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Special discounts for Faculty, Staff and
CALTECH STUDENTS: ONE DOLLAR RUSH
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Ticket Office open from 10 a.m. to 4:30 p.m. Box Office opens at 7 p.m.



A HARVARD MBA?

Discuss the Master in Business Administration Program with an Admissions Representative from the Harvard Business School

31 October, Thursday

Placement Office

No courses or areas of concentration are required for admission.



1974 marks the tenth anniversary of the Music Center's operation. Over 16 million people have visited the Center's productions, which have included dance, music and drama, both traditional and experimental. For an investment of 34.5 million dollars, the people of Los Angeles have had a bargain, and the Center is still going strong.

Culture exists elsewhere too, now that the basin is growing up. The Shubert in Century City does good work, although it hurts to say that with next Thursday's opening of the "adorable" Debbie Reynolds in Irene. If you're at all diabetic, missit. The Huntington Hartford will open Ken Kesey's *One Flew Over the Cuckoo's Nest* soon, which is a much better bet. If you can't travel so far, or haven't so much money, don't lose hope, for the American Film Theater is returning.

AFT is doing five films this year: Brecht's "Galileo," David Storey's "In Celebration" (directed by Lindsay Anderson), "The Man in the Glass Booth," screenplay by Edward Anhalt, Jean Genet's "The Maids," and "Jacques Brel Is Alive and Well and Living in Paris." Among the casts are Glenda Jackson, Topol, Alan Bates, Sir John Gielgud, Susanna York, and Jacques Brel. The season subscription can cost \$20 for the evening, or can be bought for only \$10 for students at the matinees. For information, inquire at our local AFT outlet, Pasadena's *Esquire* theater.

No Kill the Wabbit?

There is also a revival of a little-respected but fine American art form, the cartoon. At the Vagabond Theater at 2509 E. Wilshire for \$2.50 you can en-

gage in a 90 minute cartoon orgy. You can swoon at Betty Boop, cheer as Superman sabotages the Japanese fleet in Yokohama, enjoy culture with Bugs Bunny in "Rabbit of Seville." Daffy Duck is there too, and for all you speed freaks there's the Roadrunner, which also has great appeal to sympathetic masochists. The one great disappointment is the absence of the greatest Bugs Bunny cartoon of them all, "What's Opera, Doc?" If you don't know this one, I will relate the opening. We see the shadow of a valkyrie while the haunting strains of *The Ride* shred our

souls, and then we see the valkyrie — Elmer Fudd in drag. Who could ask the meaning of it all?

Now, lest panic grip with a dawning suspicion that there is no Beckman activity this week, take heart. On Saturday October 26 Don Ellis will be here. Ellis opened the season at Beckman last fall and was received most enthusiastically by the Caltech students. He is a master of innovative jazz, and with his 17 electrified pieces (orchestra, you fool) will do you up nicely. For a bit of reference, he did the score for *The New Centurions*, and he won an Oscar for his music in *The French Connection*. Be there.

Alright? Here are lots of nice ways to become a gentleman or lady of leisure, and without too much effort, you can flunk out at the same time. We take good care of you.

Did you know that 20% of all paper clips are never used at all, but get twisted by nervous and frustrated persons?



It was more than a mime the Mummenschanz performed last Friday evening in Beckman Auditorium, it was also a masque, and an evolutionary performance. The three members of the Swiss troupe, Andres Bossard, Floriana Frassetto, and Bernic Schurch, played their roles with alacrity, and with the exuberance that can only be found in the mime, where lack of dialogue allows only the language of the body.

The evening began with the appearance of an amoeboid blob. The blob slowly throbbled to life, and soon began efforts to ascend a small platform on a higher level at center stage. It succeeded, eventually, and was followed by a representation of all the links of the chain of life. There was

no time-stop. The Mummenschanz introduced us to complex single-cell organisms, asexual reproduction, a creature divided into two linked segments, the origins of sex, the egg, insects, amphibians, fish, fowl, reptiles, mammals, the ape, and a final view of a distorted man, which was a preview of act two.

Man himself was the subject of the second part of the performance. The troupe cut deeply into the emotions that make him what he is, and gave each member of the audience a chance to interpret his own reactions. The most effective section of the second part was quite probably the pastry mask sequence. Here, two potential lovers proceeded to slice off, tear off, and devour each others' masks (with subtlety and grace, of course), gradually bringing metal plates underneath into view. Unfortunately, just as the female began to show signs of acquiescing, the male became sick and ran offstage. The sequence ended with a spotlight focused on the female attempting to redo her mask (an MCP skit if I've ever seen one).

Other sections of second part dealt with the urge to gamble, facelessness, confusion, one-upmanship, schizophrenia, and ended with a beauty vs. ugly

Musicking Away Your Time -- Two

Last week, due to limitations on space, the editors cut an article by Flora in half. Unfortunately, the article was a description of the musical activities available on campus, and when published gave the impression that the ASCIT Musical and the various Glee Clubs were the only ones. The editors apologize, and hope to rectify matters by ignoring the Glee Club completely in the second half.

The Chamber Music Workshop is available to non-beginning students in woodwinds, strings and french horn. The workshop is conducted by Alice and Eleonore Schoenfeld on Thursdays from 5 pm on in 19 and 25 Baxter. Call Kathleen Kong at 449-9553 for more information.

Dr. Lauris Jones is starting a Chamber Orchestra this year. They are planning on appearing in the Los Angeles Bach Festival.

Rehearsals are currently 7 to 9 pm Wednesdays at Occidental. If you are interested, call Dr. Jones at 259-2878, 258-2600 or leave a message at x2297.

There is a free, non-credit course in interpretation and performance of classical music, given by Mr. Jim Boyk. It meets from 4 to 6 pm Wednesdays in Dabney Lounge. This class is for performances and listeners. Mr.

Boyk also gives piano lessons (for a fee). For information, call him at 393-5766.

For guitar lessons, Mr. Daryl Denning is the man to see. He has group lessons on Tuesdays, from 4 to 6 pm in the Instrumental Music Office in the Fleming basement, and private lessons (for money) may also be arranged with him. You must

Continued on Page Six

Continued on Page Seven

Going to Disneyland? Better take along a pizza from

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Audience II

Cleo Scores Success

It's to be hoped that hymns of praise do not become too abundant, for Beckman hosted a third gem in a row Wednesday. The performer was Cleo Laine. What is Cleo Laine? She is an astonishing and lovely voice, surrounded by a beautiful and very talented lady. She is also married to a marvelous composer who also plays excellent saxophone and clarinet, John Dankworth.

A large and receptive audience welcomed the show, which opened with *Here's That Rainy Day* as an instrumental, spotlighting Mr. Dankworth and the remaining three musicians, Paul Hart on Piano, electric piano, and violin, Rudy Collins on drums, and Bryan Torff on bass and electric bass. All four worked extremely well together, creating a truly admirable sound. Miss Laine opened with Arlen and Mercer's *Any Place I Hang My Hat*, immediately demonstrating her mastery of style and delivery.

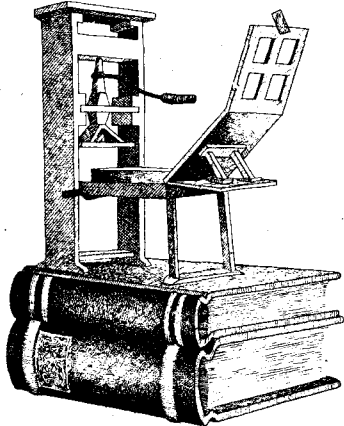
The program ranged in music from Gilbert and Sullivan toershwin to Stevie Wonder's *All I Love Is Fair* to Sondheim's haunting *Send in the Clowns*. Included was a medley of Noel Coward (highlighted by *Bad Times Are Just Around the Corner*), a medley of frequently requested songs (though *Control Yourself* was saved for an encore), and poems by Cummings, Betjeman, Mulligan Spike), Shakespeare, and Percy French set to music by Mr. Dankworth.

Miss Laine is remarkably versatile, with a voice that can sing a delicate soprano or gravelly fine tenor that would do Jelly-Roll Morton to perfection. She sings not only with her voice, but with her face and body in synthesis of communication that Wednesday built up an unparalleled rapport with her audience.

After the third encore, as all was settling down, one had time to reflect on the excellence of the total show, which included sound and lighting. Dave Spellman, Gordon Cordell, and Roy Lunel deserve highest compliments for their work.

Remembering and savouring the perfection of Cleo Laine and John Dankworth, one can only say as honestly as possible, thank you, and hope fervently for their return.

—Chris Harcourt



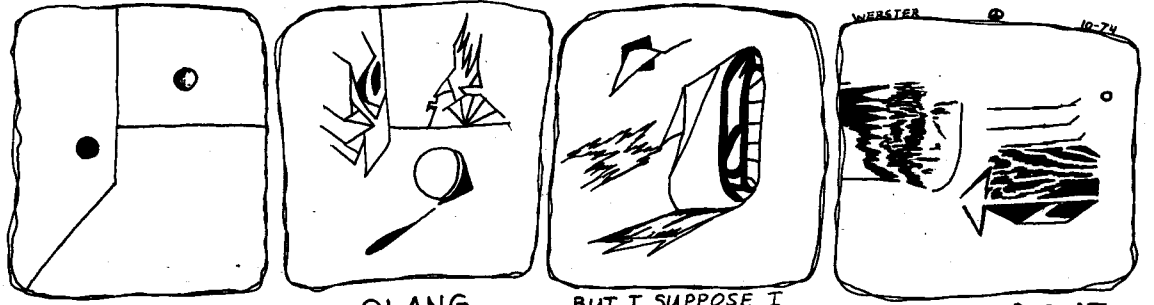
BOOKS

Watership Down

One of the basic requisites for an American best-selling book is a complete lack of valuable content. Non-fiction works that make the best-seller list are usually either biographies of someone famous (unauthorized ones are the best) or books that deal with something controversial in a sufficiently pablumized manner for the public (books on sex or other goodies). Fictional works tend to be of the Harold Robbins—Jacqueline Susann school of famous authors; i.e. "scandalous" books vaguely enough based on reality that the subjects never bother to sue. Millions of Americans, directly or indirectly, read or buy these "best sellers" (notice that I said *or buy* not *and*. There are thousands of books bought for the purpose of filling bookshelves.), so maybe it really is the sort of thing that the society wants. That is neither here nor there. The point is that, every once in a while, a book becomes a best-seller without being valueless. This is usually due to some mistaken impression on the part of the buying public. *Watership Down* is such a case. Most people think it is a book about rabbits.

The book's publishers (Mac-

"The Leave"



CLANG

BUT I SUPPOSE I SHOULD RETURN TO TECH.

REPEAT

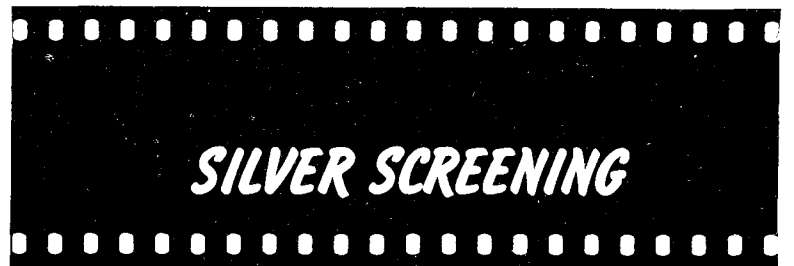
millan) have made every effort to classify the book. They print excerpts from reviews comparing *Watership Down* to everything from *Animal Farm* to Tolkien. Why? Because the public needs a neat little slot in which to stick a book before they can cope with it.

Watership Down is, on the surface, a very British book about a survival odyssey by a group of rabbits. At no point does it, however, pretend to be a children's book. These aren't cute little bunnies to be cartooned. These are rabbits that live as rabbits do, in fear of predators, more willing to run than fight, but quite willing to fight each other to the death over sufficient stakes. At the same time, these are not real rabbits, in that they have a somewhat higher than rabbit mentality. Some make poems and songs, others have prophetic visions, still others display an amazing mechanical aptitude. These are not, however, Orwellian animals. This is no clumsy political parable. The various rabbit warrens shown in the book, however, have certain applications to human life. One warren's chief rabbit is more afraid of disrupting the status quo than of the possible (as it turns out, inevitable) destruction of the warren and its inhabitants. Another warren has no enemies except for a farmer who feeds them, and in return kills a few at a time. A third warren has made itself safe and secure by destroying the freedom and comfort of almost all the rabbits therein. Yes, there are definite political overtones, but the problem is that these are not just rabbit-shaped people.

Throughout the book, it becomes obvious that the author, Richard Adams, made every effort to look at the world through the eyes of a rabbit. Whenever possible, things are

described in terms that would be familiar to a rabbit, or not described at all. One reviewer complained that plants were named but not described. That reviewer missed the point entirely, that the descriptions given are in terms of edibility, smell, feel, things that a rabbit notices. The terrain was mentioned in terms of cover provided by the plants, how safe it would be to dig in, things that feel proper to a RABBIT, not necessarily what a reader could get out of a cheap travelogue.

The question no doubt remains, is *Watership Down* a book worth reading. In my opinion, yes, for the same reason that one should read *Gulliver's Travels* or any other book that is sort of a children's book for adults, at least any good one. This book, like so many others, provides a fresh viewpoint of the world, and that might be a good thing, because the old viewpoints get worn out so quickly. Besides, how often do you get a chance to read a controversial book about rabbits? —Nick Smith



Airport 1975 is another of the seemingly interminable series of films dealing with urban disaster—that the technological environment we have created is somehow turning against us. In this, it follows the great tradition of such films as *Terror on the 40th Floor*. The plot, like all its predecessors, is trite. However, the film will be a huge success. Not only is this a popular theme, but the film has so much schlock appeal that it can't possibly fail.

Schlock exists in abundance, too. Charlton Heston, true to form, does indeed revert to being God. Debbie Reynolds' "Singing Nun" is reincarnated in the form of Helen Reddy, who sings to Linda Blair, who is ill and is flying to a kidney transplant operation. Gloria Swanson plays herself, and is just chock-full of reminiscences. Karen Black portrays the chief stewardess who suddenly finds herself as the airplane's pilot (but, remembering the schlock, she is also the six-year fiancée of a rather reluctant Mr. Heston).

The plot itself is founded on an urban disaster: the pilot of a private plane has a seizure, and his grip on his stick causes his craft to collide with the nose of a 747, causing a conveniently man-sized hole to appear in the cockpit, and killing or incapacitating the entire flight crew. When the radio also fails, the only alternative is to winch a pilot from a jet helicopter (HH-53B) into the cockpit of the 747 [This is actually done in an astonishing stunt at 7000 feet and 125 knots]. The first pilot is winched down and is lost, presumably to die in a free landing. Then Heston does the inevitable, and saves the day by becoming the second pilot.

As one might imagine, the 747 lands successfully, and everyone lives happily ever after. Families are reunited, Heston will finally marry Black, Reddy will find God, Blair gets a kidney, and Ms Swanson saves her memoirs. Who could ask for more—except of course, for the four men who die?

The film is highly attentive to detail and is very detailed, as all urban disaster films must be. Make-up however, did leave something to be desired. On the whole, the film was less than satisfactory. —Phig Castor

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Spacefiller

A Test For Your Flag

by Etaoin Schroedlu

Below is a list of geographic and demographic questions testing your knowledge of the United States, many of a rather tricky or obscure sort. There are 100 points; a score of 50 indicates a fairly good knowledge; 75 is very good. (A score of 100 indicates you cheated.) Answers will be printed in a future issue of *The Tech*.

- (10 points) Which of the following three cities are farthest, second farthest, and closest to Boston, Mass. (in air miles)? 10 points for the exact order, no partial credit. The cities: Los Angeles, Calif.; San Francisco, Calif.; Seattle, Wash.
- (10 points) For two points each, name the largest cities (population, 1970 census) in each of the following states: Nevada, Alaska, Kansas, Florida, Virginia.
- (10 points) For two points each, name the five largest states in the U.S. (population, 1970 census) and their rank. Give yourself one point for a state belonging to the five that you put in the wrong rank. Careful, Easterners!
- (10 points) Rank the follow-

ing western regional cities in order from the westernmost to the easternmost, scoring two points for each correct position: Portland, Ore.; Reno, Nev.; San Francisco, Cal.; Los Angeles, Cal.; San Diego, Cal. Note: only one of these choices is a very close one.

5. (20 points) Name the ten largest cities in the U.S. (population, 1970 census). Give yourself one point for each city belonging to the top ten that you name, and one point for each city that you locate in the proper rank spot.

6. (5 points) True or False: The state of California has both the largest county in the United States in terms of land area and

the largest county in the United States in terms of population (1970 census).

7. (5 points) True or False: The Hawaiian Islands are farther west from Los Angeles, Cal., than they are south.

8. a. (5 points) What is the largest (population, 1970 census) state capital of any state in the United States?

b. (5 points) What state capital of any state in the U.S. is the highest altitude above sea level?

9. (10 points) New York City, with a 1970 population of almost eight million persons, contained 43.2% of its state's total population, the highest proportion of a state's population of any city in the country. (Obviously, Washington D.C. is disqualified.) For five points, name the city which is second in

Continued on Page Seven

CACP

Continued from Page Two

from the Caltech community concerning air-pollution, engine emissions, current pollution standards, and just about anything else concerning cars and our environment.

The current CACP staff consists of: Robert Cowan (Sr. ChE), Dave (Leadfoot) Beatty (Sr. Eng), and Richard Beatty (So., ME) of Caltech, along with

But for those of you who like classical music, the Musicale has a good collection of classical records in Fleming Basement, if you have a key. See Eric Benjamin in Ricketts House for keys and more information.

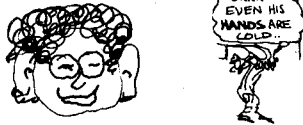
This, to my knowledge, is a complete list of the music offerings at Caltech. But there are probably some programs out there that I don't know about. If so, please call me on x2157, and let me know about them.

You may have noticed something about this list. Wednesdays seem crowded, don't they. If someone wanted to play in a group Wednesday afternoons, there are two conflicting groups, and on Wednesday nights there are four! This is not at all fair to those students interested in music. And the whole problem would be very easily solved if one person or organization (like the defunct faculty Committee on Musical Activities) were in charge of all music activities on campus. Scheduling would be corrected, there would be more cooperation between groups, and perhaps credit could be arranged for some of the activities, like the credit given in Lit 15 for work on the newspaper. If you think something could be done, contact

Dr. Lyman Bonner, x2297; or Dr Robert Huttenback, x1037.

George Blaine (Jr., ME) of Loyola and James Henry, lab director.

CACP is always looking for new people to work on the project. While volunteers are not paid, they do get academic credit and a lot of experience with cars. But the CACP emphasizes that they are not a group of car buffs, but a serious organization conducting research into vehicle pollution. For more information get in touch with Dave Beatty, 132 Page (x2115).



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WANTED

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Buying or selling something? You, too, can take out an ad in *The California Tech*! \$1.50 per inch plus \$.25 per extra line for Classifieds. Bring ad copy to the Tech office or phone ext. 2154.

Organ Stimulation Is Scheduled for 27th

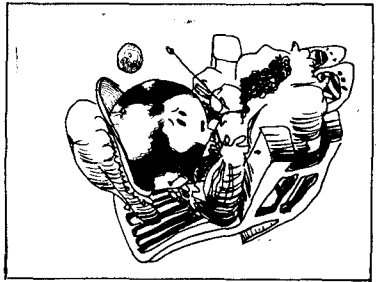
A computer-performed organ concert will be presented Sunday evening, October 27, at 8:00 p.m. in All Saints Church, 132 N. Euclid Avenue (four blocks west of Lake). Works by Back, Ives, Ussachevsky, Rimsky-Korsakov, and others will be featured.

The organ, built by Schliker in 1962, has 88 ranks on six divisions. The console of the instrument has been interfaced by Dr. Prentiss Knowlton of JPL with his own PDP-8 computer. The computer reads in a musical score encoded on punched or magnetic tape, does some bit-juggling, and spits it out to a custom-built interface unit which supplies voltage to the pipe valves. Some rather intricate programming was needed to convince the machine to do this, but after three years the software is quite refined. Occasionally a glitch occurs; this does not cause merely a crash but rather a roar as nearly 500 pipes come on simultaneously.

A large amount of musical

creativity is possible with this system. The computer can perform 768 independent functions (i.e. starting a note, stopping a note, turning on a rank of pipes, etc.) simultaneously. This facilitates such things as orchestral transcriptions played on six divisions at the same time, which would be impossible for a human organist. Also, any nuance or expression can be programmed in, which permits the combination of various artists' interpretations in a single performance. Rapid and thorough registration changes are trivial with this system and add much to the performance.

For more information on the concert or the system, see Dick Beatty in 203 Ruddock.



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Page Seven

Friday, October 18, 1974

Soccer to Break Streak?

by Chris Russell

On Wednesday the soccer team managed to complete a six game losing streak at the hands of Claremont-Harvey Mudd by a score of 5-1. Tech got on the scoreboard first with a pressing attack that forced the CHM fullback to pass the ball back to

his goalie. The goalie, however, was out of position, and the ball rolled by into the goal.

Tech maintained a strong attack for the rest of the first half, but their shots invariably bounced off of the posts, inches away from goals. As time advanced in the second half the Tech defense slowed and Claremont scored several goals with one man doing a keeper until he was right on top of the Tech goalie.

Tomorrow Tech threatens to break their losing streak with a game against La Verne at La Verne. Last year this game was the only win.

News Briefs

Continued from Page One
from 9:00-10:30 for women's volleyball. If you aren't into volleyball, let us know what you are interested in so we can plan for future sports. For info, contact Sue Gregg, Page R.A. (Feel free to bring friends...)

by Dave Sivertsen
Caltech met with defeat in a double dual meet last Saturday. The Claremont course was vastly different from Caltech's home course, in that it was only 4 miles and totally flat, making the meet a race of speed instead of endurance. Caltech lost to Occidental 50-15 and to Pomona-Pitzer 39-20. Oxy made an exceptionally strong showing, capturing the first eight places. Gregg Griffin finished ninth. Caltech's second man was freshman standout Jeff Poulin, who has been running strong for the varsity all year. Caltech's varsity complement was rounded off with Rick Dabus, Steve Kellogg, and Joe Arpaia. This puts Caltech's overall record at 3-3 and conference at 2-2. Next meet is Saturday, Oct. 19, 10:00 a.m. against Cal State Dominguez Hills and Chapman College at Lower Arroyo Park.

Runner of the Week

This week's runner is Senior Gregg Griffin. He has been Tech's top distance runner for three years, consistently placing in conference and district, and holding school records in the 2, 3, 6 and 26 mile runs. Coach Neal says Gregg's strong points are his consistency and determination. He runs an "iron-man" race each and every meet.

When queried about his motivation to run for 2 or 3 hours a day, Gregg had a variety of

reasons. He enjoys the competition, striving for personal improvement and believes he will come out ahead in the long run by being physically fit. (Note clever pun.)

Gregg's advice to stay fit is running or swimming (the disadvantage of the latter being its requirement of a pool). The most important thing is to be consistent. He thinks it's great to see professors, secretaries, and students out running. He enjoys running on streets as a fun way to watch people and see the

sights of Pasadena, animate and inanimate.

Racing doesn't bother Gregg, as it gives a sense of accomplishment (but it feels nice to stop and makes you appreciate the value of a glass of water). He states the immediate physical benefits as making it easy to go to sleep, enjoying overnight trips to meets, and team comradeship. Besides running, Gregg is also a 3.8 GPA Chem major who participates in such diverse activities as glee club and the ASCIT musical.



CLOSE PLAY highlights interhouse softball game between Dabney and Ruddock houses. Photo by R. Feldman

Drive For Fun-Profit

On Saturday, October 19, the Elysian Fields Rallye Club is presenting "stOPP for the Third Time," the third in its annual series of car rallyes starting out of the southeast corner of Montgomery Ward's parking lot (next to the Jack LaLanne spa) just off of Rosemead Boulevard four miles south of California Boulevard. Entry is \$3.50 per car regardless of the number of people in it. For each seven cars entered, there will be one trophy awarded.

For those not acquainted with rallying, there will be a special

classification for first-timers, who will compete only among themselves. A skill-gimmick rallye is not based on time, speed, or driving skill, but on the ability to interpret deviously worded rules and route instructions, giving techers an inherent advantage of real-worlders. The rallye presents a good opportunity for upperclassmen to get to know their new housemates as well as providing an inexpensive Saturday night entertainment. Registration is from 6:30 to 8:30 p.m. For more information call 449-8344 or see David Smallberg in Blacker.

Spacefiller

Continued from Page Six
the U.S., for any state, in this regard. (Hint: the proportion of the city in question is not much less than New York City's 43.2%.) For another five points, name two of the three cities occupying third through fifth places on this list (Hint: these top five cities happen to be the only ones containing a quarter or more of their state's population) OR name three states which each have two cities each of which contains ten percent or more of the state's population, and the cities in question. (Hint: there are seven such states, and no state has more than two such cities. On this part of the

Mummenschanz

Continued from Page Four
contest in clay that devolved into beast vs. beast, and provided a needed link between the two parts.

It was a superb performance, bringing laughter and just enough sadness to make it worth anyone's while.

-Dennis L. Mallonee

question you are allowed one wrong guess, so you may guess four times, but three must be right to earn the five points. Don't forget to name the two cities for each state that you guess, and both cities must be correct for the guess to be correct) It is not required to guess numbers for any part of this question, although you may do so if you wish. (Unnecessary hint: this question is both tricky and obscure.)

10. (10 points) This question concerns the changes in populations of the states of the U.S. between the 1960 and 1970 censuses. There were three states that lost population, net, between 1960 and 1970. For five points, name two of these three states. (Useless hint: only one of these three states was among the three states which lost population between 1950 and 1960.) You are allowed three guesses on this part. There were also, of course, states that grew very rapidly between 1960 and 1970. For five points, name five of the seven states that grew by more than 25% in this decade. (You are allowed a total of seven guesses on this last part.)



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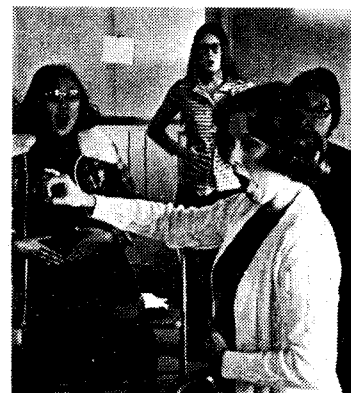
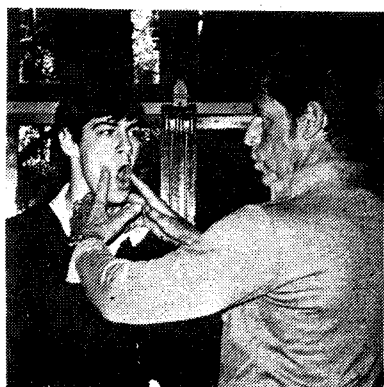
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