

New Trustee Named

Robert Anderson, president and chief executive officer of Rockwell International Corporation, has been elected a Caltech trustee, President Harold Brown announced yesterday.

Anderson, who is active in business, professional, and civic affairs, joined North American Rockwell in 1968 as president of the company's Commercial Products Group and corporate vice president. He was named executive vice president of the corporation in 1969 and president and chief operating officer in 1970. In 1974, a year after North American Rockwell became Rockwell International, Anderson was elected chief executive officer. He has been a director and member of the corporation's executive committee since 1968.

Prior to joining North American Rockwell International, Anderson was elected chief executive officer of the corporation's executive committee since 1968.

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ROBERT ANDERSON joins nearly forty other members currently serving on the Caltech Board of Trustees. Photo courtesy of Rockwell International

Modern Dance

It Could Happen Here

Skeptical? It does happen—twice a week in fact, in Dabney Lounge on Tuesday and Thursday afternoons. Karen Goodman teaches two classes each day, working with students whose experience ranges from none at all to years of lessons.

Ms Goodman is a professional dancer who has always been interested in dance, but did not get started until her senior year in college. She remembers lessons her mother gave her at the age of two and a half, consisting of mimed motions to singsong patterns. These led to a recital in which she was struck by the older girls in white tutus: "I knew that was what I wanted." She continued to make up her own dances, watching Fred Astaire movies, but took no further lessons until college. As a senior Ms Goodman began studying dance seriously, and decided to go on with it. She holds a Masters in Dance from UCLA.

Ms Goodman is a co-founder of the southern California company "Eyes Wide Open Dance Theater", with which she performs occasionally. She has

just joined the "Margalit Dance Theater", which will go on tour nationwide next year.

But what is 'modern dance'? Ms Goodman defines it first as an American art form—the only dance that is truly American, and it is still little performed in Europe. It began as a rebellion from ballet, a need for more freedom of movement. "Movement is an art form. The material is anything that one feels can be dealt with in working toward some expression." Techniques have been developed to explore movement possibilities of the entire body and to strengthen the body. Classes are designed for discovering how bodies can move and expanding this range through stretching and strengthening exercises.

Ms Goodman began teaching as a graduate student at UCLA, where she taught classes for non-dance majors. She has worked a lot with non-professionally oriented dancers, and thoroughly enjoys teaching. "It's very creative and feeds into choreography, as choreography feeds into teaching." She finds performing

and teaching a good mixture, and, especially as a new dancer, found that teaching helped solidify the concepts of dance.

Teachers do not differ from other students she has taught. "I love working with intelligent students, and experience is not necessary. I enjoy giving insight to non-dancers." This is one of the strengths of Ms Goodman's teaching. Starting from nothing, she builds your strength and awareness, relying on the ability of the students to grasp concepts presented in a single verbal explanation. One rapidly progresses to more complex and interesting exercises, as the body becomes more limber and more easily controlled.

The two classes differ in complexity. "Body Movement is an introduction to exploring movement possibilities through basic exercises. It deals with relaxation exercises and finding the internal motivations for moving, eg. breathing, the pulse." The class progresses by taking these basics into some simple dance movements. The Modern

Continued on Page Five

Undulating Beauties

Belly Dancers Bare Midriffs

Once again and for his last time Dirty Dave will appropriate the remaining dregs of all those "Discretionary" funds and bring a dozen or more undulating beauties to Caltech. That's right! Next Friday at noon on Winnett Plaza a troupe of glorious belly dancers will bare their navels in front of our insatiable students and faculty. Don't miss this unusual demonstration of Newtonian physics.

Last Show

The coffeehouse will have one last show this Sunday night. We're featuring 2 folk guitarists and one belly dancer. The shows will begin around 9:30.

Mime Class

If anyone, students, staff, or public, is interested in joining a class in mime, we're starting one at Caltech this summer. If you're

interested, or have questions, please call 792-0086 and ask for Moses.

Organizational Move

Any organization which currently has a meeting scheduled in Winnett Lounge or Clubroom I from June 16, 1975 until July 10, 1975 will have to find other quarters. These rooms are being painted, and new drapes are being

Continued on Page Three

Gomez, Price in Runoff

by Dave Sivertsen

Last Wednesday made history with an election (or non-election) of class officers. Many of the offices were not filled, even in some of the cases where the candidate was running unopposed!

Seniors

The race for king of the jungle (president) proved nothing. 32 votes were required to win, but were instead distributed among four candidates, with Cliff Leong and Channon Price each receiving 16 votes, Wesley Chalfant 15, and Bob Cox 12.

Vice president also needs a rerun, as Alan Shusterman netted 27, Tom Little 20. Treasurer was also unfilled, as Howard Zebker's 32 votes were 5.5 votes short of the requirement. For secretary, Dennis Wang received 27, Steve Klein 18, and Keith Neerman 17. A runoff will be held between Wang and Klein.

Juniors

With only a small number of candidates (exactly a 1-to-1 mapping) the juniors managed to resolve some offices. Peter Lu won the presidency with 62 votes. Vice president was unresolved, as Alan Silverstein garnered only 34 of the 43 required votes. The treasurer will be Thomas J. Estes (45 votes), and the secretary will be Rich Feldman (45 votes).

Sophomores

With a plentiful supply of candidates, unaware of the implications of a GPA, the sophomore class elections resolved but one office. The presidency had five candidates: Mike Aziz, 27; Matt Crawford, 26; Chris Wheeler, 21; Ray Gildner, 15; and Danny Arias, 13. The top two will meet in a runoff.

For vice president (in charge of vice?) there were four candidates. Lisa Heinz was 2.2 votes short of the requirement for victory with 43 votes, Tom Snyder had 30, Marta de Jesus, 19; Young-Il Choo, 10. Again the top two will run off. For treasurer, it was Yuri Owechko with 44; Andy Falls, 24; Yin Shih, 20; Alvin Drehman, 7. Morris Jones won secretary uncontested with 59 votes.

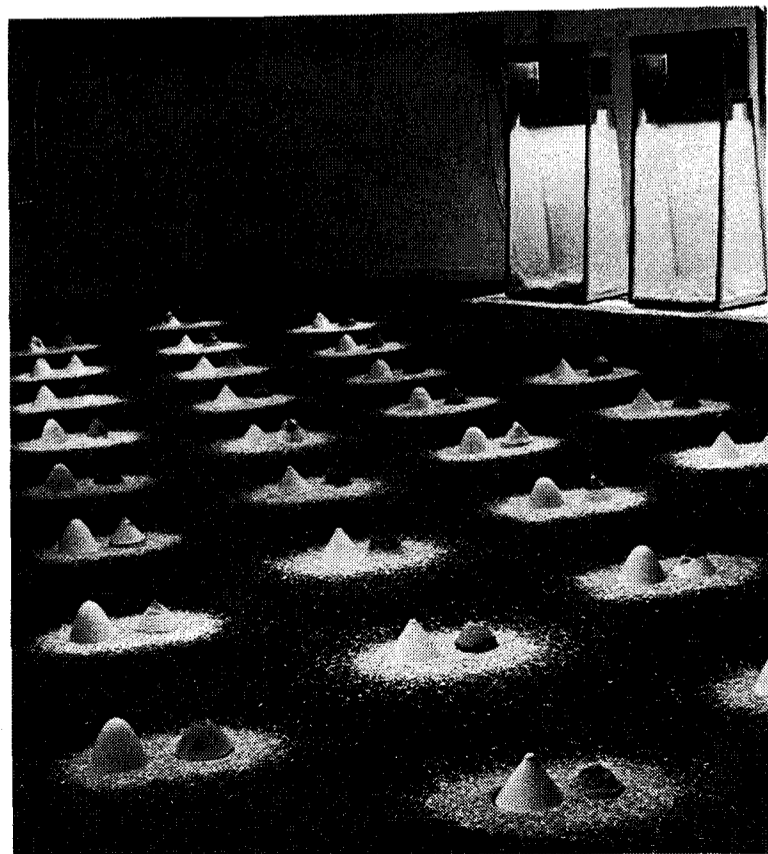
The sophomores-to-be lacked some of the prevalent apathy, as their turnout (both for candidacy and voting) exceeded the junior and senior classes by a considerable margin.

The End is Near

At the 81st annual commencement, which starts at 10:30 a.m. Friday June 13, Dr. Harry Gray, professor of chemistry, will speak on "The Chemistry of Caltech." Last year Dr. Richard Feynman, Nobel Laureate and Richard Chace Tolman Professor of Theoretical Physics, spoke.

Dr. Gray, whose current research is on the effects of metals on living organisms, is a popular lecturer and teacher (you all remember 'Harry the Horse, don't you?'). He has published more than 200 research papers and ten books.

A total of 390 degrees are scheduled to be awarded. Preliminary figures are 171 BS, 119 MS, 96 PhD degrees and four special engineer degrees.



CARL CHENG'S EROSION is one of the exhibits currently being shown in the Baxter Art Gallery. Photo by G. Laib

Cinematech Films Scheduled

by Robert Tajima

This summer, Cinematech has an ambitious line-up of thirteen shows for all you bored students staying at Tech during the vacation:

- June 21—*Hiroshima Mon Amour & L'Avventura*
- June 27—*The Wild One & Rebel Without a Cause*
- June 28—*East of Eden & On the Waterfront*
- July 11-13—*Memories of Underdevelopment & Macunaima*
- July 19—*Two Daughters & Days and Nights in the Forest*
- July 25—*Treasure of the Sierra Madre & Dead End*
- August 9—*High Noon & Shane*
- August 16—*It Happened One Night & Mr. Deeds Goes to Town*
- August 23—*Children of Paradise*
- Sept. 5-7—*Women in Revolt & Pink Flamingos*
- Sept. 13—*Jules and Jim & Umberto D*
- Sept. 20—*Wizard of Oz & Dumbo*

As always, shows will be in Baxter Hall, but beginning 7:30 p.m. instead of 8 p.m. Also, note that there are some shows on

Fridays and Sundays although most will be on Saturdays. Admission is a dollar for Caltech students and a buck-fifty for real world people. If you plan to see a lot of these shows be sure to buy a series ticket which would save you money. For Tech students, \$8 gives you 13 admissions and \$4, 6 admissions. Other people pay \$12 and \$6 respectively. Go to the Caltech Y, or send your check or money order there.

A show you shouldn't miss seeing is *Memories of Underdevelopment* with *Macunaima*, both coming out of Latin America. *Memories*, the first film to be released in the United States from post-revolution Cuba, is a complex subtle story about Sergio, a skeptical observer of the revolution. It was highly acclaimed by many critics including Vincent Canby of the *New York Times* when it was released here in 1973. After intermission, be ready to turn your head around 180 degrees for *Macunaima*, which is freaky and funny on the surreal level. It is a Marxian (as in Brothers) adult

fairy tale directed by the Brazilian Woody Allen, Joaquim Pedro de Andrade. Both films have been rarely shown in the Los Angeles area.

Anyone who is easily or even semi-easily grossed out shouldn't see *Women in Revolt*, by Andy Warhol, and *Pink Flamingos*, by the even more eccentric John Walters. In Warhol's film, which is an outrageous soap-operatic popcorn spiller, female impersonators play the part of the feminist heroines. *Pink Flamingos* has been acclaimed to be the sickest film ever made, the lowest of the underground flicks. However, the perverse mind would find it hilariously funny.

Other shows worth noting are the July 19th Satyajit Ray films from India, the Brando and James Dean films in late June, and the special Bogart weekend in July. In fact, most of these films are fairly decent, a good thing to do after coming back from the beach.

For more information about the Cinematech Summer Series, pick up a series flier at the Caltech Y.

Faculty Honored

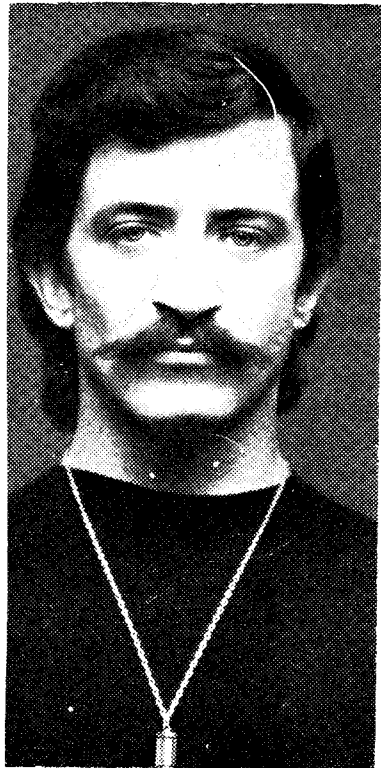
Four Caltech faculty members have been elected members of an international scientific honor group, the Böhmsche Physical Society. Scientific members are chosen for their contributions to particle-solid interactions by independent, original research.

The four Caltech honorees are Dr. Carver A. Mead, professor of electrical engineering, for his contributions to the understanding of metal-semiconductor interfaces and for the development of new concepts in computer architecture; Dr. Thomas C. McGill, associate professor of applied physics, for contributing to the understanding of the electron-hold condensed phase in semiconductors and the amorphous state in covalent

materials.

Dr. Marc A. Nicolet, professor of electrical engineering, for contributions to the understanding of noise phenomena in semiconductors and the development of backscattering spectrometry; and Dr. James W. Mayer, professor of electrical engineering, for his contributions in the fields of ion implantation in semi-conductors and backscattering spectrometry.

"The particle solid interactions field has been increasingly active since around 1950," Professor Mayer noted. "In this small and highly regarded society, which has heavy membership from Europe and Japan, we can consider it quite an honor that four new members this year were chosen from the Caltech faculty."



Read the RIVET!

Buy a Rivet Ad

THE ASCIT FRIDAY NIGHT MOVIE The Bed Sitting Room

7:30 p.m. & 10:00 p.m.
in Baxter Lecture Hall

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

NEXT WEEK, **FINALS**

CALTECH FORUM

Committee Reversal

"IPS Committee"? Try ISP. (Independent Studies Program)

—J. Teich

[Sure had us fooled]

Fred Retaliates

Paul Shubert wouldn't know a rock if one came up and sucked him.

Sincerely,

Fred

Trustee

Continued from Page One

American Rockwell, Anderson spent 22 years with Chrysler Corporation, beginning in 1946 as a graduate student in the Chrysler Institute of Engineering. He graduated with an MS degree in automotive engineering in 1948. After a number of engineering responsibilities with Chrysler, he advanced to executive positions, and assumed the responsibility of vice president and general manager of the Chrysler-Plymouth Division in 1965.

Anderson has been active in the Society of Automotive Engineers, having served as secretary, vice-chairman, and chairman of SAE's Engineering Activity Board. He is a director of the Hospital Corporation of America, Nashville, Tenn., and Security Pacific Bank, Los Angeles. Anderson also is a member of the advisory council of Stanford University's Graduate School of Business, and a member of the board of governors of the Aerospace Industries Association of America. In addition, he is a member of Tau Beta Phi, Sigma Nu, Phi Kappa Phi, and Sigma Tau.

He and his wife Diane make their home in Pittsburgh.

Fred's Fruitcake

It may have come to your attention that a large amount of valuable news space is being taken up in the senseless debat over the merits of the Fred Logs. This space is, indeed, greatly needed to further the light of knowledge. Besides, the Fred Logs need more space.

Edward J. Bielecki, Jr.



The CALIFORNIA Tech

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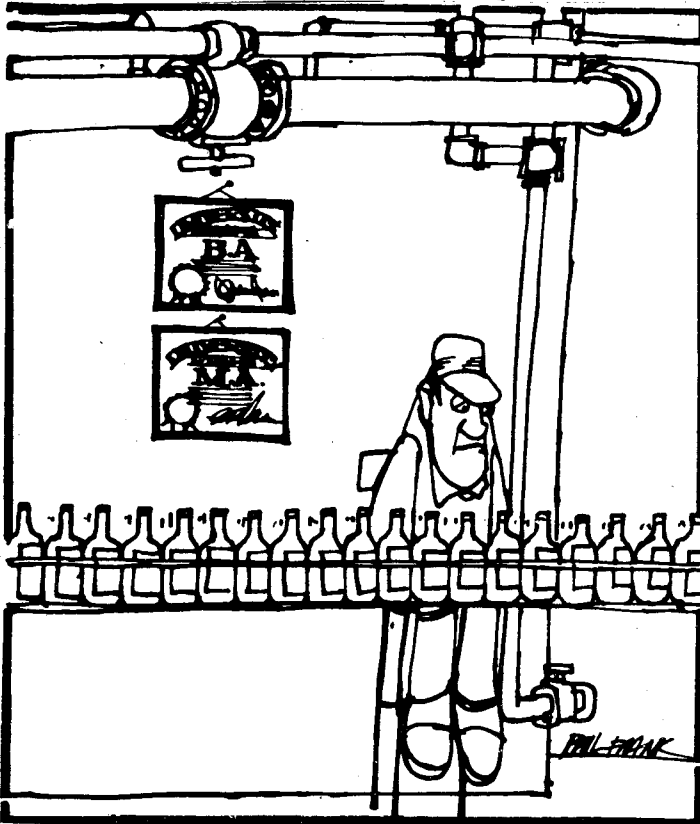
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FRANKLY SPEAKING by Phil Frank



News Briefs

Continued from Page One

installed.

Nominations Reopened

Nominations for Jr. Class vice president and Sr. Class treasurer have been reopened and will close next Wednesday. It would be appreciated if all people voting no for these offices would offer nominations.

Missing Ballots

The ballots from Wednesday's class elections have been removed from the ASCIT office. Anyone seeing a large manila envelope with the words "Class Elections, May 28, 1975" are requested to contact Jill Evensizer at x1603.

Stud. Shop Meeting

There will be a Student Shop meeting on Saturday, May 31, 1975 at 1:00 p.m. Shop elections will be held, and the shop cleaned up. If you wish to become a member of the shop, show up at

2:00 p.m. If you have any questions, see Lou Scheffer, 226 Page.

Art Lectures

You are cordially invited to attend a lecture on recent trends in art: "Conceptual, Earth and Process Art: The Present Avant Garde" by Ms Melinda Wortz. This lecture will be Thursday evening, June 5 at 8 p.m. in Baxter Gallery. Ms Wortz is the southern California editor of *ArtWeek*. The lecture (which will be accompanied by slides) will be informal. Ms Wortz will attempt to trace some of these recent artistic manifestations back to their origins in Marcel Duchamp.

May I Have The Envelope . . .

This year's winner of the *Haren Lee Fisher Memorial Award in Junior Physics* is Thomas Himel of Blacker House. Thomas was highly recommended for the award for his work in high energy physics by Dr. Garmire and Dr. Scheid.

The award began in 1967 when Mr. and Mrs. Fisher's son, a junior

majoring in physics at Caltech, died in an automobile accident. Since then an award of \$150 has been given to an outstanding junior physics major. Last year's winner was Joe Polchinski.

Be Famous! Draw Grafitti

The *little t* is looking for some cartoons and other doodling to grace the pages of the 74-75-76 issue. As a bribe, we will give away ten bucks and a share in our limitless prestige to the lucky contributors of the five best entries (which should be vaguely related to life at Caltech). Please submit entries in the form of black-on-white line drawings, ink only, and no larger than four inches by seven inches printed size. Send entries to the *little t* at Winnett Center, or give them to Flora.

Clarksville Addendum

In the May 23rd issue of the *Tech*, "The Last Bus to Clarksville" news brief indicated that the ASCITBus was making its last run for the year to UCLA. This should *not* be confused with the Inter-Campus Vehicle running between Millikan-USC-UCLA. Service continues as usual for *this* shuttle (until further notice). Schedules are available at the reference desk of the library, and anyone wishing to use the service is asked to make reservations there (or by phone, x2405) 24 hours in advance. Limit: 5 passengers.

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THE FOOL.

Jet Noise Studied

A potentially important source of noise from jet aircraft has been verified by a graduate student here at Caltech.

It can be a dominant noise source during the landing phase of flight, and is caused by uneven burning in the combustion chamber, Dr. Jerome M. Auerbach reported in his doctoral thesis, which will be summarized shortly in the "Journal of Engineering for Power," published by the American Society of Mechanical Engineers.

Other major noise sources from jet aircraft are the large turbofans at the front of the engines and the high speed exhaust of the engine. The noise generated by the fan is the dominant source during landing. The exhaust, known as the jet noise source, is the origin of the loud high frequency roar of aircraft during the takeoff and cruise phases.

The new source of noise was first proposed in 1970 when Dr. Frank E. Marble, professor of jet propulsion and mechanical engineering, sought to explain a low frequency rumble in the noise produced by jet engines. The low frequency sound could not be associated with fan noise or exhaust jet noise.

Dr. Marble and a former Caltech grad student, Dr. Sebastian Candel, now in France, formulated a theory which proposed that the low frequency rumble arose when density or temperature fluctuations in the gas were accelerated through the exhaust nozzle of the engine.

"While engineers have reduced somewhat the turbofan whine and the roar from exhaust turbulence, the curbing of noise from uneven

burning in the combustion chamber will require research and development work on combustion chambers, with emphasis on improved fuel-air mixing," Dr. Auerbach said.

Uneven burning causes density fluctuations in the hot exhaust gases, and his experiments showed that the acceleration of these density fluctuations through turbine and exhaust nozzles will produce a sound. This is the basic operation of the new noise source. The research was supported by the Office of Noise Abatement in the Department of Transportation.

Auerbach, who will receive his doctorate officially in June, worked closely with Dr. Edward E. Zukoski, a professor of jet propulsion here, when he undertook to test the theory and to verify experimentally the existence of the noise source. He modeled the exhaust section of a jet engine by a simple convergent-divergent nozzle, and used nitrogen gas to simulate the hot exhaust gas. The nitrogen was accelerated in the nozzle to supersonic speed and then was exhausted into a sound-suppressing anechoic chamber.

A pulse wire heater introduced density fluctuations of various frequencies and amplitudes into the flow. Auerbach measured the density fluctuations and associated sound produced and showed that the density predicted the production of noise by this noise source.

"We showed that the density fluctuation produced sound all by itself," Auerbach said. "If you don't have steady, uniform

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You'll never know how much good you can do until you do it.



Felipe Maghirang knows how much good he can do. He does it every week as a volunteer at a home for mentally retarded children.

Lawyer Barry Klickstein knows how much good he can do. He does it by volunteering to help poor people win their rights in court.

You can help people.

In fact, there's a crying need for you. Your talents. Your training. Your concerns. They can make you priceless as a volunteer in your community.

Take a moment to think of all that can be done. For children. The environment. Sick people. Old people. People who just need someone behind them.

Then take another moment to think of what you can do. Perhaps by applying your job skills or personal interests to voluntary action.

There are probably several organizations hard at work in your town doing things you'd be proud to be part of. We'll put you in touch with them. Join one. Or, if you see the need, start a new one.

If you can spare even a few hours a week, call your local Voluntary Action Center. Or write: "Volunteer," Washington, D.C. 20013.

It'll do you good to see how much good you can do.

Volunteer.
The National Center for Voluntary Action

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SONNYS PIZZA SCHOOL FINALS SPECIAL

Special Antipasto Salad
Side of Spaghetti with Meat Sauce
Slice of Garlic Bread
Drink - Ice Tea or Coffee-

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99¢

99¢

FOOD TO GO

796-8259

OR EAT IN

OPEN FOR LUNCH

LOCATION: 1846 E. Colorado corner Allen & Colorado in the new WARNER PLAZA

The CALTECH Coming Events

It's getting very close to the end now, and I'm sure you've no more time to read this than I have to write it, so I'll be brief (for a change).

Thursday at noon we auction off all the lost and found items we've collected in the last year, with the proceeds going to a charity. Walt Meader, our experienced barker (among other things) will be doing it again. Claim it quick, whatever 'it' is, or it goes on the block in the Quad.

It'll soon be f***'s time again, but don't despair. We'll be bringing you **Decompression Chamber** in cooperation with the Health Center and the Caltech Service League as usual this term, on Saturday and Sunday nights of next week, from 9:00 p.m. to 1:00 a.m. Come by for munchies, friends, music, games and graffiti.

Two other items, concerning cash. If you brought books to us to sell (remember, we maintain a used-book-store), check to see if they've sold; we may have some money for you. Also, if you've taken out a no-interest loan, please repay it as soon as you can, especially if you're leaving the Institute.

We've seen a lot of interest in the LA Philharmonic, so, be informed that we will be buying season tickets and providing transportation next year. More on that in this column next term.

—Alan Silverstein



She is one of the 12 million children in South Vietnam and Cambodia facing hunger and disease, after 20 years of civil warfare.



Indian child waits for her daily bowl of CSM (corn-soy-milk emergency feeding mixture) in Bihar Province.

Luana

Equicon 3 Results are In

Last weekend, for those of you who care about such things, was the third Equicon, the major west coast Star Trek convention, this year combined with Fantasy Filmcon. I will not write about the convention itself, since describing a convention is very boring. I will, however, mention a few things that came out of it.

The first of these things is a new movie. This movie, called *Luana*, may have the distinction of having more money spent on the publicity than on the production. I first saw publicity and theater lobby card designs almost three years ago. These were intriguing, showing artwork by one of the top artists in the sword and sorcery field. The promos gave the impression of a sort of lost land, with Luana being the main character in some sort of fantasy story. Most of these impressions were wrong, judging from the movie.

As produced, *Luana* came out as a lasagne-jungle flick (see spaghetti-western for reference). Most of the technical crew were Italian, with a few apparent Americans and an oriental in the title role, and not looking at all like all that expensive publicity. The girl they got to play Luana is a very lovely young thing with a name which may be Mei-Chen, but I'm not sure. The rest of the cast will be allowed in this review to remain anonymous, as I'm sure all but the most hardened wish. Luana never says anything, and she has some of the best lines in the film.

The quality of the film was indicated to me by two things: the first being a PG rating even though the female lead wears only a loincloth. This feat is accomplished by the most ghastly, staged effect of *always* having Luana's hair in just the right

places (two sections in front, one in back), even while she climbs over rocks, runs behind waterfalls, swings through trees, etc. The Comics Code Authority would have loved it.

The second indication of the film's quality (or lack thereof) was the fact that: even though I had waited over two years to see this film, was sitting in an uncomfortable chair next to a reasonably congenial companion, I fell asleep during two of the fight scenes.

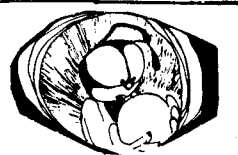
Luana is a ninth-rate female Tarzanish movie that might have been entertaining had it been made 25 years ago. To get top-notch people for the publicity and novelization but leaving the film itself in the hands of incompetents is inexcusable. I weep for what might have been.

Laser

At the convention I picked up a

copy of a new book from a new book company. Laser Books is the name of this new publisher, and they seem to be trying to duplicate the success attained by DAW books in the last couple of years. Roger Ellwood is the editor of the new series of books, and the first book (which I have not yet finished) was a freebie to get feedback. Their first twelve books for sale are scheduled, and four of them will be by authors with at least some skill, Gordon Eklund and Raymond Jones. The only thing that bothers me about these books is that the list of books and synopses didn't really say anything about 11 of the 12 books except the authors and titles. Anyway, the series has possibilities, especially since the books in it are cheaper than the current prices of the other companies.

Continued on Page Six



Can't you spare a bite to save a life?

THE THREAT OF SEVERE MALNUTRITION OR EVEN STARVATION FACES 400 TO 500 MILLION CHILDREN LIVING IN 60 OF THE POOREST COUNTRIES OF THE WORLD.

The situation is so grave that the United Nations Children's Fund, UNICEF, has declared a state of emergency for these children.

Malnutrition is the biggest single contributor to infant and young child mortality in developing countries, where 25 to 30 percent die before the age of 4.

In many parts of Africa almost every child under five suffers from some protein malnutrition. In Latin America and Asia more than half of all childhood deaths are related to malnutrition.

AMERICANS HAVE BEEN LUCKY. FAMINE HAS USUALLY BEEN FAR, FAR AWAY FROM US.

We are one of a small number of nations — favored with an advanced technology — whose children are the world's most fortunate. They will have longer and healthier lives than people in developing countries.

Harvard nutritionist, Dr. Jean Mayer, says, "We are among the world's one billion richer people who use almost as much cereal to fatten the livestock they eat as the two billion people in the poor countries eat directly as food. Twenty years ago the average American ate 50 pounds of beef annually; this year he will eat 120 pounds. There's every good reason from the point of view of health why we should cut down on consumption of animal products. And we would at the same time free enormous amounts of grain for famine relief elsewhere."

TO HELP MEET THE SPECIAL EMERGENCY NEEDS, UNICEF MUST FIND AN ADDITIONAL \$80 MILLION IN THE NEXT 12 TO 15 MONTHS.

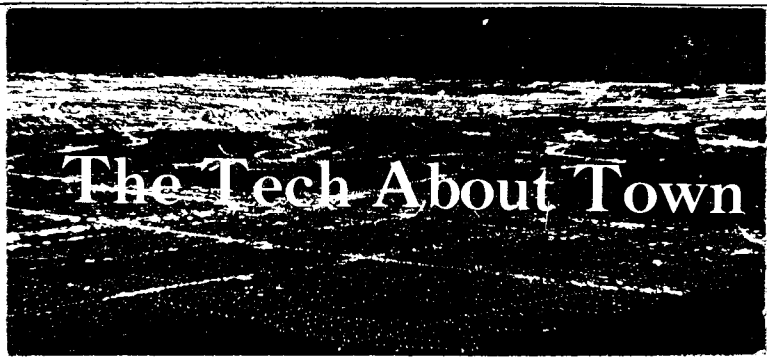
UNICEF, with long experience in helping children in emergencies, is taking immediate action, alerting governments and agencies worldwide about the critical need for action. However, no government or government-agency can act as swiftly as an individual can act. Individual contributions, no matter how small, are the children's main hope for survival at this moment in time.

A contribution of even \$1.00, the average cost of a hamburger, french fries and a soda, can buy a year's supply of multi-vitamins for a child in a crisis country. \$15 can bring supplementary food and health services to 5 malnourished children for a month in some developing countries. And \$66 can buy a deep well hand-pump to provide water for drinking and irrigation in drought-stricken areas.

Can't you spare a bite... to save a life? Please take time to send your contribution today.

UNICEF 

WORLD CHILD EMERGENCY, 331 E. 38th Street, New York, N.Y. 10016



This being the last leg of our literary legerdemain, it seems only fitting to discuss Summer. It seems even more fitting for me since there isn't a lot to discuss. Summer, you see, won't begin until we've all left. When it does begin (in July), you will have various and sundry series from which to choose, the best choices being the Hoolywood Bowl, the Universal Amphitheatre, the Greek Theatre, and anything out of town. In short, diversion is plentiful this summer, so find your own (but pass it around when you get it).

Before Summer, however, we still have some time to kill, and some of it will be killed with parents who show up for commencement or for moving purposes. So where should you take your parents? Unless sight-seeing is part of the goal (in which case almost anything is acceptable if the place is right, e.g. the Music Center) I would recommend a dinner-cabaret. I've mentioned the rise of this phenomenon in L.A., and it's worth the attention. The two cabarets that come to mind are Fig Newton's here in Pasadena

and the Meeting House Cabaret downtown.

Of course, if they (your parents) are around longer, you can look to specific events, such as the Miss Nude U.S.A. Beauty Pageant. Or, Ray Bradbury on June 6 at the Throop Memorial Church, 300 S. Los Robles. Students are \$1.25, and if you'd like to know what Mr. Bradbury will do, call 795-8625. They didn't answer when I called but maybe they will for you.

More immediate entertainment? Go back up to Isla Vista. Improve your tan, frisbee, and go Saturday night to UCSB for "He That Plays the King," the (apparently) concluding work of a mini-residency at UCSB by four members of the Royal Shakespeare Company, Tony Church, Susan Fleetwood, Mike Gwilym and Ian Richardson. These actors have been presenting Shakespeare—the form and the content—in readings and commentary, adding up to a residency to be much admired and enjoyed, if at all possible. More information can be had by phoning (805) 961-3535. Enjoy.

—Chris Harcourt

Bus Lanes Proposed

The feasibility of devoting highway and street lanes to the exclusive use of buses has been proved in Los Angeles, according to transit officials from several transportation agencies.

"The El Monte Busway and the contraflow lane downtown have been integrated for an entire year now, and have proved that exclusive bus lanes work in the Los Angeles basin," said Byron E. Cook, president of the Southern California Rapid Transit District. "Caltrans and the cities of Los Angeles and El Monte have joined together to produce one of the most successful bus transit projects in the nation."

Cook noted that ridership on the \$58 million Busway has increased over 400 percent since it began limited operations less than two years ago. "Now 15,500 passengers a day travel by RTD bus between El Monte and Los Angeles," he said. "Buses now carry as many people in a peak hour as one-and-a-half lanes of the San Bernardino Freeway."

RTD has operated nearly 135,000 trips—over 1.5 million miles—on the Busway in the last

12 months, and has experienced just one accident, when an auto skidded into the side of a bus. No one was injured in the incident, and only minor damage was incurred by the vehicles.

The contraflow lane covers a nine-block stretch of Spring Street downtown. Buses travel counter to the normal one-way flow of the thoroughfare, returning the street to two-way operation again. Together with the bus-only lane on the San Bernardino Freeway, it has greatly improved transit service downtown and in the San Gabriel Valley. "Over 560 buses are now leaving downtown each weekday according to their schedules without experiencing any extraordinary delays caused by heavy traffic," Gilstrap said. "The travel time to El Monte Station has been cut significantly due to the presence of the contraflow lane."

Gilstrap added that the Spring Street operation has served primarily as an experiment in signing and signaling, and has proved to be a safe, low-cost transit innovation which can move more people than a lane of low-occupancy vehicles.

News Briefs

Continued from Page Three

Health Center Library Depletion

The Health Center book inventory shows a large number of Health Center library books are missing. If you have borrowed a book and forgotten to return it *PLEASE DO SO NOW*. The Health Center cannot afford to replace books every year, therefore, if the trend not to check out the books and not to return them continues, they will be forced to change their library policies or perhaps discontinue the use of the Health Center library altogether.

Sunday Songs

Tim Erickson and John Middlebrooks will direct the Altadena Congregational Church Chancel Choir Crowd and the Caltech Brass Quintet, respectively, in a program of music at the Altadena Congregational Church, 943 E. Altadena Drive (just east of Lake), at 9:30 a.m. this Sunday morning, June 1. The program will feature Bach's Cantata 150, "Nach dir, Herr, verlanget mich", (that's easy for you to say) with orchestra and soloists. A freewill offering will be taken to defray the bribe given the minister to insure that he won't preach a sermon.

Spartan War Game

There will be an armored minatures game by Spartan in Blacker House dining room on Saturday, May 31 at 7:30 p.m. They have promised to bring lots of tanks.

Transcendental Meditation

An introductory lecture in transcendental meditation will be given June 5, 12-1 p.m. and 8-9 p.m. "T M," as taught by Maharishi Mahesh Yogi, is a simple, natural technique which expands awareness, develops clear thinking and perception, and provides deep rest—resulting in more dynamic activity and full expression of creative intelligence in daily life.

Modern Dance

Continued from Page One

Dance class suits students with more experience, and those who have taken the basic class and want to go on. It is more of an intellectual challenge, as well as a greater physical demand. Ms Goodman defines the goals of the more advanced class as "a basic study of Modern Dance techniques, dealing with exercises in a more dancelike framework. This includes learning small pieces



It is unusual (at least for me) to have the chance to review a live performance after enough time has passed for the direct sensory stimulation to have worn off and the analytical side to come through. When watching a talented performer, especially in the classical music field, one gets caught up in the excitement of the performance. Looking back later, things just might not seem the same. Such is the case with Michael Lorimer.

When Michael Lorimer appeared at Beckman Auditorium (earlier this month) the audience was given a better than average set of program notes, and was treated to a very good classical and baroque guitar recital. At first, I thought it was a great performance, but, after a little time has passed, I find it a much less memorable evening than it might have been.

Mr. Lorimer began the evening with music played on a baroque guitar, a weird little instrument that produces a very nice sound. The notes explained that the one he played was a replica of one made for one of the daughters of Louis XIV. It looked like something that belonged in a place like that. The point of baroque guitar seemingly is that it was the first major guitar music that involved plucking instead of strumming the strings. In any case, the examples of baroque guitar music included one piece by an author, who is known only by his book of guitar music published in 1692 (Roncalli, by name). Another piece was by Corbetta, considered by many to be the premiere guitarist and instructor of the late 17th century. He taught guitar to royalty in both England and France. His epitaph indicates that he would never have died if Death had ears to hear the music Corbetta made. The piece by Corbetta was indeed excellent, both in content and in actual performance.

The second part of the performance was made up of Bach (Johann Sebastian, if you must) and was very good. It was the sort of thing that classical guitarists seem to play all the time. Bach just seems somehow obligatory for some instruments (organ, for

example). The third group of musical pieces was somewhat more unusual. There were pieces by Turina and Villa-Lobos, the former a piece written in the 1920's for Andres Segovia (which shows you how long he has been around) which was a rather fun thing. The Villa-Lobos music was a group of Preludes of a style involving a mixture of European classical music with Brazilian folk music. The blend was very interesting.

It was the music of Maurice Ohana that probably most puzzled the audience. This piece was described in the notes in such a way that leads one to think in terms of visual rather than sound effects. There is good reason for this. Ohana is sort of a cubist composer (Picasso is a cubist painter, if that helps) and the music he wrote has a rather bizarre, clashing sound. The tones are very strange at best, and the progressions rather difficult to follow. I am not sure just why Michael Lorimer placed this piece where he did in the program, for it was good, but somehow jarred the mood rather drastically.

Mr. Lorimer finished the performance with a piece by Albeniz and a couple of encores, and received about 1/4 of a standing ovation. The reasons for this partial response might be due to the fact that there seemed to be a couple of technical mistakes here and there (although one couldn't tell in the Ohana piece), but also because the Beckman audience is a little bit spoiled. After all, during the past few years, Montoya, Segovia, and the Romeros have made regular visits to the big white carousel. Michael Lorimer is good, but he does not have the years of experience and mastery of those lofty few. He is good, but he is not yet great, and I think that the audience made him responsible for this "failing" and expected more from him. This is perhaps too bad, but, after all, Segovia is a tough act to follow. At the time, I found the Lorimer performance most enjoyable, but somehow just not as thrilling as the other guitarists who have performed here. Lorimer is good, but not yet great.

—Nick Smith

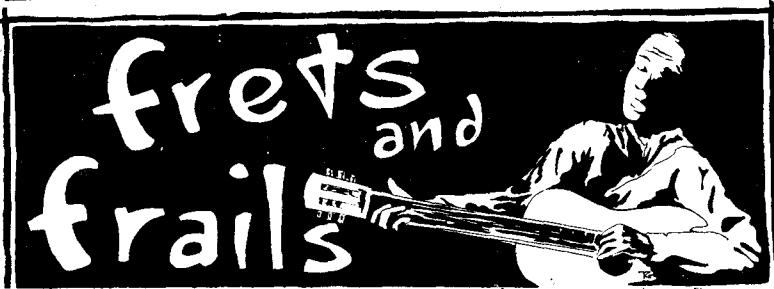
of choreography." Aside from verbal explanations and demonstration, Ms Goodman employs basic rhythms of counts, claps, and drumbeats. The longer pieces are taught with music.

Modern Dance does exist at Caltech, and I highly recommend it to those looking for an interesting P.E. class or for enjoyable exercise. It stretches

and strengthens muscles—including some you were unaware of—and demonstrates the possibilities of lyric, flowing movement in situations beyond dance. The sense of improvement is definite and provides motivation for trying harder at the basic exercises, as well as aspiring to the more complicated patterns. Ms Goodman will be back next year.

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STEVE GILLETTE
Llyn Foulkes and the Rubber Band
MUSIC and COMEDY



This week, and apparently for a couple of weeks to come, the Ice House is using a format of only two acts, with more time for each. In at least some ways, this is more satisfying, since it allows longer sets for each act, and more time for the audience to get into any one mood. More on that later.

Steve Gillette is the headliner this week, a singer and songwriter whose songs you have heard performed by many other people. The Sunshine Company (remember them), John Denver, Linda Ronstadt (I think), Ian & Sylvia and others have recorded his songs in the past. He combines his excellent songwriting skills with some great guitar playing to provide some good entertainment. His singing is neither as bad as Leonard Cohen nor as good as Elton John, but quite sufficiently in between. He sang several of his own songs, ranging from "Darcy Farrow" to "2:10 Train", both rather sad songs. He also sang songs by other writers, such as Tim Hardin's "Lady From Baltimore". Actually, thinking back, Steve Gillette sings very few happy songs. I wonder if that means something. The only really happy song he did out of a set of about a dozen songs was an old Van Morrison number, "Brown Eyed Girl".

Various rumors indicate that Steve Gillette wants to do another album (I think there was one several years ago). Such an album would be welcome, since his music is enjoyable for so many different reasons: the guitar work, the beautiful lyrics, even the general low-key attitude he takes toward his music, a lot less nauseating than a couple of musicians I can think of. Steve Gillette is worth seeing.

Llyn Foulkes and the Rubber Band are the other featured act at the Ice House this week, and they are something of a bizarre change-of-pace. Their music is reminiscent of Spike Jones in that they include almost every instrument in the book, and a few from outside of it. The band is made up of Paul Wortz, John Forsha, David Barry, Mike Baird, Gayle Gates, and the inimitable Llyn Foulkes, nominal leader of this menagerie. The music of this band centers around the lunacy

that makes up greater Los Angeles. Songs such as "The San Fernando Valley Was My Home" and "A Smoggy Day in Old LA" sing the (praises?) of this great metropolis. Such aptly titled numbers as "Rubber Rhumba", "Rubber Band" and "Rubber Rock" also make up a large part of their repertoire. The style of the music ranges from 1930s and earlier all the way to occasional modernity. The instruments include guitars (including a 'lap guitar', sort of a slide ukelele), banjos, pianos, clarinets, tubas, saxophones, and all the weird noisemakers and percussion instruments in the world. There are bells, horns, gongs, little metal tubes, large wooden tubes, flat sheets of metal, and a gun. These combine to make up the difference between this and any other band that just happens to be a little strange.

Llyn Foulkes, Gayle Gates and David Barry do most of the vocals, and of the three, Llyn is the weakest. It is obvious, however, that it is his force and craziness that make the band what it is. He is the one who spends the entire act sitting behind an enormous console of auto horns and noisemakers, wearing a jacket that has to have been designed for a ticket barker at a rodeo. Gayle is the living caricature of pseudosexiness that was a mainstay of the big band era of music, or the cuteness of a kiddy song, or whatever the band is doing at the time. David Barry's occasional vocals are fun, and his keyboard work seems good. Mike Baird plays clarinet and sax, contrasting the lunacy of the act with his own formal attire. Paul Wortz plays an enormous tuba and only slightly smaller bass sax. John Forsha does the strings, and very well.

At the beginning of the evening, the band sounded a little bit nervous, Llyn in particular. Once they calmed down, the second set was a lot of fun for the audience, but be prepared to be blasted out of your seat on a couple of numbers. WARNING: Under no circumstances should you sit directly in front of the headlights on David's keyboard. You have been warned.

Anyway, Llyn Foulkes was a definite change of pace from the normal entertainment you see almost anywhere. They were good once they got going. My only complaint was that they are a very difficult act for anyone to follow, since their style clashes with almost anyone. Steve Gillette handled it well, but I fear for any lesser performer. It is difficult to win over an audience that has just lived through the Rubber Band. They are described as a cross between Spike Jones and Dan Hicks, but that is something of an understatement.

Next week the Ice House features the return of the Muledeer and Moondogg Medicine Show and an appearance by Neely Reynolds. For all of those whose first reaction to that last name was "Who the hell is Neely Reynolds?" let me explain that he was the winner of the national Singing Cowboy contest a year or two ago. Don't hold that against him though.

-Nick Smith

Equicon

Continued from Page Four

The North American Science Fiction Convention (NASFIC) is still making an effort to hide its location. It will be somewhere in Los Angeles during Labor Day Weekend, to make up for the fact that the Worldcon is in Australia. If I find out just where NASFIC is by next week, I'll let you know.

-Nick Smith



Crystals Determined

The structure of the microscopic, needle-like crystals that cause acute gouty arthritis has just recently been determined, helping to pave the way toward a cure for this painful disease.

Dr. Neil Mandel, research fellow in chemistry at Caltech, reported this week that not only has he determined the structure of this crystal, but he has also grown it in his laboratory. In addition, he has elucidated the structure of the crystal of a related arthritic disease, pseudogout.

A major difficulty encountered in the study of gouty arthritis has been a lack of information on the molecular structure of the inflammatory crystals. For years structural research on gout was hindered by the poor quality of the crystals found in the human body. Dr. Mandel believes the key to understanding gout lies in the arrangement of atoms on the crystal surface.

Gouty arthritis, unlike pseudogout, attacks males almost exclusively, and is caused by an excess synthesis of uric acid. This excess, the chemist added, is induced largely by metabolic disorders or a diet too rich in purines, and probably not by liquor as had long been supposed.

The crystals of the two diseases are similar but not identical in structure. However, their action is similar and may, in fact, be identical. It is not known precisely where in the body either kind of crystal grows, but once they form, leukocytes in the blood are attracted to the spot. The leukocyte (a type of white blood cell) views the crystals as foreign bodies and promptly scoops them up and begins their digestion. A single white cell may contain hundreds of the crystals.

Each leukocyte has small sacs within it called lysosomes, which

hold a variety of about 20 digestive enzymes. During the digestion of the inflammatory crystals the lysosome mysteriously releases its powerful enzymes out into the parent white blood cell. It is this enzyme release that initiates the inflammation and pain experienced in gout.

The inflammatory crystals do not accomplish the enzyme-release by puncturing the membrane of the lysosome with their sharp points, as was supposed for years. Dr. Mandel suspects that they do it by a chemical reaction. He believes the reaction for the gouty arthritis crystal takes place in one of two ways:

1. A protein coat covering the crystal is eaten away, exposing the crystal surface, which then hydrogen bonds to the lysosomal membrane. If the membrane moves or bends against the hard crystal surface, the membrane is apt to rupture because the hydrogen bonding that attaches the crystal to the membrane is stronger than the van der Waals force that holds the membrane itself intact.

2. The crystal may cause a chemical reaction, releasing another substance, which in turn causes the sac membrane to tear.

The ruptured lysosomal membrane frees the enzymes which then rupture the leukocyte wall by eating their way through it, and are then capable of invading the joints. The crystals are small, about 10 microns (four ten-thousandths of an inch) long and a hundredth of that wide. The gouty arthritis crystals are needle-shaped, while those of pseudogout resemble a very thin prism. The crystals found in gout are monosodium urate

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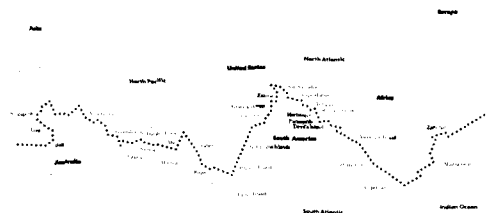
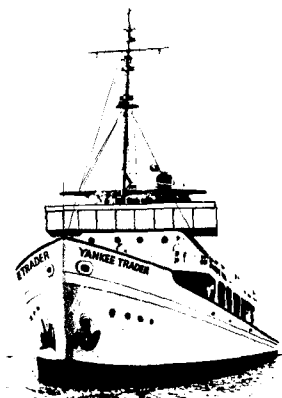
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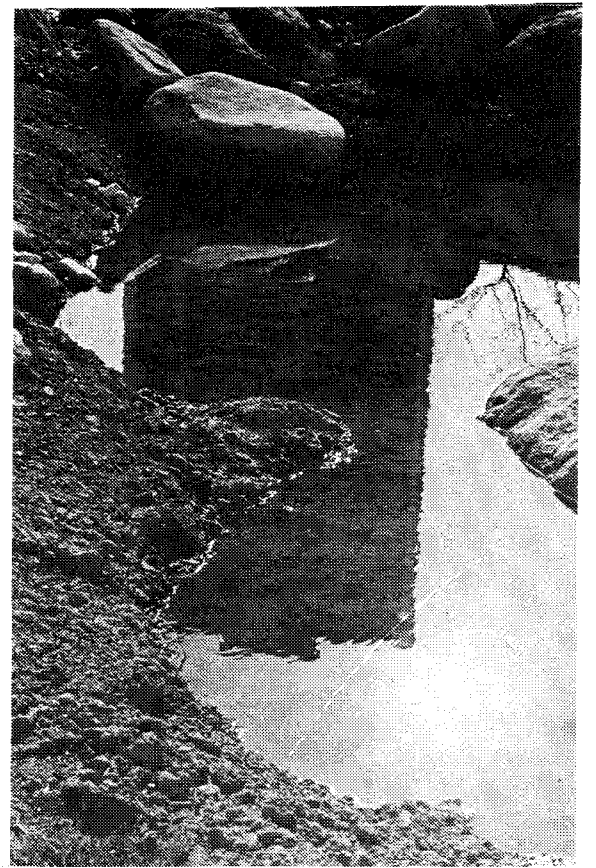
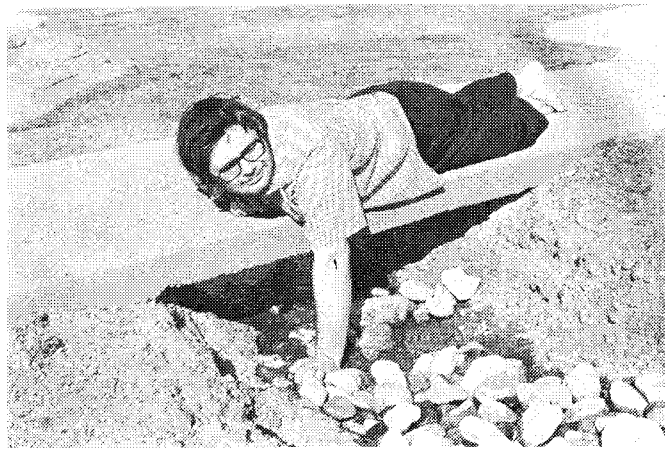
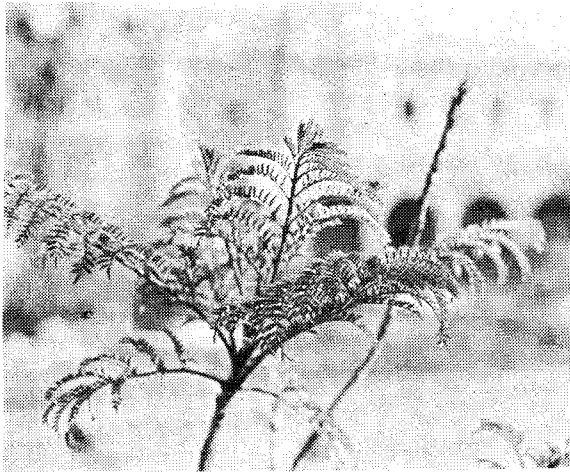
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Crystals

Continued from Page Six

monohydrate and those found in pseudogout are calcium pyrophosphate dihydrate.

Dr. Mandel is attempting, with the support of the Arthritis and Metabolic Disease Institute of the National Institute of Health, to learn if the pseudogout crystals rupture the lysosomal membrane by the same chemical reaction as the gouty arthritis crystals. He thinks there may be slight differences in the final stages of the disease.

"If we can understand what's happening at the crystal-membrane interface, we may be able to work out a cure for the disease," Dr. Mandel stated. "If one could stop the rupturing of the lysosomal membrane, the disease would be arrested. There would then be no tissue inflammation from the digestive enzymes, although there might be some slight discomfort due to crystals collecting in one part of the body or another."

Jet Noise

Continued from Page Three

burning in a jet engine you're going to produce noise by this process.

"We considered the significance of the sound produced. Calculations showed that while it is a small contribution when the jet exhaust velocity is at maximum, as it is on takeoff, the sound is significant when the exhaust velocity is low during the landing of an aircraft. A 50-degree (Fahrenheit) temperature fluctuation in the exhaust temperature would produce a sound as loud as the average auto horn 20 to 30 feet away."

A few feet from the engine exit the noise level from this source would be between 159 and 165 decibels, he calculated. That's considerably above the threshold of pain for the human ear.

"We've shown that the uneven burning in a jet engine is a significant source of noise," Auerbach said.

Military Training

Flashback from the Past:
March 10, 1926

Has Tech's educational orientation changed throughout its growing years? The following was a hot issue on campus forty-nine years ago. How was this issue resolved? Surprisingly, the "anti-militarists" lost, 203-94!

A secret ballot on the question, "Resolved: That Compulsory Military Training at Tech Should Be Abolished," will be taken Friday of this week for the purpose of determining the sentiment of the student body on this important question and to place the result of the vote before the faculty as representing student opinion on the subject.

In addition, a formal debate on the same question will be held at the Friday assembly, when two men from each side will present arguments in an attempt to uphold their side of the question. Although there will be no rebuttal, each man will give five minutes in which to place his views before the student body.

Widespread Interest

Intense interest has been shown in the military question in the past few weeks, as evidenced by the potent arguments that are heard everywhere about the campus. At a meeting held last Wednesday evening in the Dugout, it was decided to put the above resolution before the student body for a vote. Whatever the result of the vote, no direct action will be taken by the students. The faculty, it seems, is about evenly divided on the question and the sole purpose of the vote is an attempt to crystallize student opinion in order that the faculty may know how the student body stands on the subject.

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Mistress Rewarded

After our latest disaster in the dungeon there was considerable feeling that we should move our explorations to another site or disband the group altogether. And as usual, Superelf was ready with one of his great plans. It seemed that a wandering hermit had told him of a place nearby that was known in whispered conversations as "the Labyrinth". He had left Superelf with instructions for finding the place, though he had refused to guide us, and then disappeared in the night.

With our fortunes at low ebb there seemed little to lose in at least looking for the place. Fourteen of us set out on horseback the next day following

Fred Leaves Town

the crude map that Superelf had put together. Without difficulty we came, around midday, to a large, flat-topped rise in the ground, matching the hermit's description.

By the end of that day most of us were under the impression that what we had actually found was an enormous orc lair. Just underground we had defeated a force of twenty-five orcs, a few of whom had penetrated so far into our own lines that I had killed one myself with my dagger. A little farther in we'd found an assembly room filled with trunks and bags. A few of these contained treasure and we had begun looting them until an alarm gong hidden inside one had gone off and sent us scurrying to the surface.

Returning through another entrance that descended in a large, square spiral, we fought more scattered groups of orcs and accumulated a respectable treasure. One little group had laughed at us from behind what proved to be a false door until we had given up on hitting the thing with our shoulders and blasted it open with a magical spell. We caught and slew them after a short chase.

Our wandering brought us back to the assembly room and we took the time to investigate some of the side rooms that led off of it. In two places we found caches of magical weapons, the most extraordinary of which was a lawful, intelligent sword that became the possession of Legolas. We cast lots for the other items and Hugh acquired a magical shield, but I lost out, myself. I had my eye on a potion for the control of red dragons, but it went to a female magician who called herself only "the Mistress". (It was she who had thrown the spell that had broken in the false door.) All told we considered ourselves quite well rewarded for having cleansed the world of fifty orcs.

The next week eight of us

returned and entered by way of the spiral ramp. Two levels underground Legolas' sword detected gold behind one of the doors. We knew from the previous expedition that the door opened into a twenty foot square room that was the core of the spiral. The room had been empty before, but at the insistence of the sword we broke open the door. Inside were five bags and a couple of trunks guarded by a single ogre. Golden Boy and Superelf jumped forward, fought the creature into a corner and slew it. Then with Sterling helping them, they started sacking the treasure while the rest of us stood guard outside in case any more ogres showed up.

Suddenly the door slammed shut and we could hear a loud scraping noise behind it. Fearful of what might be happening to our companions inside, we started pounding on the door. This failed and Athanasius and Father John began beating a hole in it with their maces. Almost simultaneously a second ogre appeared to give Hugh and Legolas a good fight.

Through the hole in the door we could see that the room was empty. Only the trapdoor in the center of the floor remained from before. I quickly guessed that this might be the ceiling of the original room and that our friends might be down below us. While the two clerics enlarged the hole in the door, I sent Hugh and Legolas, who had just killed the ogre, down the spiral to try and find a lower door. They returned sooner than I'd hoped. Around the next corner a rock wall blocked the passage.

Meanwhile, below us our three friends had broken out of the square room and also found the

rock wall from the other side. Going back into the room they had started hammering at the trapdoor from below. By the time we'd succeeded in making a mansized hole in the door they had broken through the trapdoor and Sterling had gathered all the gems and jewels in the room into his bag.

Superelf was the first through the trapdoor and had just reached us when the ceiling of the upper room started to slowly descend. Golden Boy came up next and called down to Sterling to toss him the jewel sack.

"To Hell with you," he called back, "you are not getting these jewels if I get trapped in here."

With that assurance we quickly assisted him through the trapdoor and out, leaving the room in time to see the ceiling and floor meet with a sickening crunch, and more than enough force to crush man or elf.

After comparatively uneventful struggles against another ogre and numerous former men (unfortunates who had joined the ranks of the undead), we made our way back to the surface and to town. The treasure we found netted each of us nearly ten thousand pieces of gold and for the first time I began to feel rather wealthy.

I used part of my gold to move out of the Fiery Gronkel and into larger quarters, and some more of it in a secret deal with a magician who had been traveling with another party. For a sizeable sum I acquired a ring which allowed the wearer to walk on water.

I began trying it out when I thought no one was around, but my secret was quickly exposed by a near tragedy. One of our clerics (who shall mercifully remain nameless) happened to be meditating by the lakeshore shortly after sunset. He had just returned from an expedition and was wearing his full suit of chain

mail when he saw me walking out on the lake. He called some thing and raised his arms, and without thinking I waved back. Seized by the conviction that he was being beckoned to by a miraculous vision the poor fellow plunged off the bank into eight feet of water. I was hard-pressed to save him from drowning.

The incident (and the uproar which followed and might have gotten me burned for heresy in a less "enlightened" area) strengthened my growing desire to get away from Hollystone and find a more secluded residence. In my wanderings I finally came upon a large natural cave, halfway up a hillside overlooking the north shore of the lake. While seemingly inhospitable, this proved to be just what I needed.

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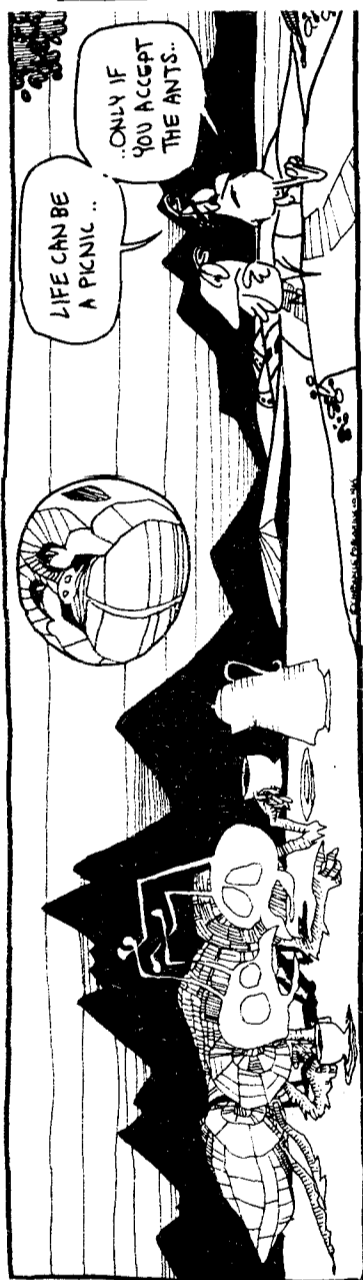
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