



The CALIFORNIA Tech

FINAL
One Of The World's
Great Newspapers

Volume LXXVII

Pasadena, California, Friday, December 12, 1975

Number 11

Divers' Corner

Chambers

by Alan Silverstein

Finals Week at Caltech would be a lot more dismal if it weren't for the legendary Decompression Chambers. This term there will be three evenings, not two—a total of fifteen hours of munchies and relaxation for you to take advantage of. The times are Saturday, Sunday, and Monday nights from 8:30 to 1:30, the place is Winnett Lounge, and the idea is for everyone on campus to have somewhere they can go to talk to people, take it easy, and stay for as long or as short as they like.

What can you do there? For starters, you can be around people—lots of them, usually.

Cart Theft Growing Problem

by Steve Oualline

The pantry has a problem with people who borrow shopping carts and do not return them. There are fifty carts missing. Each cart costs between fifty and seventy dollars, so the total value of the rip-off is between twenty-five and thirty-five hundred dollars. In order to

There are numerous games to play, if you desire, and some new ones will be bought this time. There are almost always some sort of munchies out, free of charge (but the intention is not to try to provide dinner). Cinematech has rented three hours of silent movies, to be shown to the accompaniment of the jukebox, of course. It's a friendly atmosphere and a better place to flick than in your room.

For many years the Decompression Chambers were held on the weekends and on Fridays. Last year the Friday nights were abolished for various reasons. Now the sponsors, who include the Caltech Y, the Health Center, ASCIT (ESC), and the Service League, will be putting it on for Monday night as well, as an experiment.

Take a break between finals, or stop off on the way back from Tommy's. You're invited!

Minotaur's Labyrinth

Ariadne

by Greenie

Ariadne, the legend of the Minotaur's labyrinth, has captured the artistic mind for centuries, in opera, song, and story. Thomas Corneille's 17th century masterpiece is a poignant retelling of this ancient tale. At 8:00 p.m. tonight, in Ramo Auditorium, Spectrum Productions will present Caltech with the world premiere of Oscar Mandel's English rendition.

At the time of the play's action, Athens is delivering its annual tribute of six strong young men and six beautiful young women to be sacrificed in the Labyrinth to Crete's dreaded half-man, half-bull, the Minotaur. Theseus, the young prince of Athens, has determined to put an end to this horrible custom, and has arrived in Crete as one of the sacrifices. Ariadne, the daughter of King Minos of Crete, falls in love with Theseus and gives him the means of killing the Minotaur and the secret of escape from the Labyrinth. To escape the subsequent wrath of her father, she flees with Theseus, taking her

dearly beloved younger sister Phaedra. The fugitives stop on the island of Naxos, where Theseus and Phaedra fall in love. They abandon Ariadne, who, betrayed by the man she saved and the sister whom she loves above all things, sinks in a well of despair.

Ariadne is a tragedy without bloodshed, a drama of human feelings and the interplay of duty and passion. Having given up home and position to save Theseus, Ariadne finds herself abandoned by him and betrayed by her beloved sister. Theseus, although aware of his duty towards the woman who saved his life and allowed him to end his country's horrible tribute, is unable to resist the passion that draws him to her sister; and although Phaedra is torn by what she is doing to the sister who reared her, she is helplessly drawn to Theseus. Their roles torment them, but they are inexorably driven by their passion. It is with remorse that they abandon Ariadne to her misery; as they leave Phaedra

speaks hopelessly of their small chances for future happiness. Although Phaedra and Theseus are pathetic figures, Ariadne's reactions to her bereavement make it her play: her reactions to the tragedies of betrayal, broken dreams, and abandonment make a very moving and human story.

Ariadne is the best play of the younger brother of the great French playwright Pierre Corneille. Although most of Thomas' plays were "box-office" successes in his day, only *Ariadne* survived, holding the French stage for 200 years before it was forgotten. Recently rediscovered by Caltech's Professor Oscar Mandel and translated into English for the first time, *Ariadne* should become once more as popular as it was up to a hundred years ago. It certainly will provide a short (two hour) break before plunging into finals, representing for the Techers who take the time to see it a triumph of the human over the scientific.

News Briefs

Post Insertions

Beginning Monday - 15 Dec. 75, posts will be inserted at the north end only of the East Chester parking lot. These posts will be inserted at 6 p.m. each Monday thru Friday and will remain in place weekends and holidays.

Purloined Preserves

The Jam Room in Baxter Basement has lost (or somebody has "borrowed") five items. If you know their whereabouts, contact security at x 1702: 2 coil patch cords, 1-25 foot cord, 1 high hat stand, 2 high hat cymbals and 1 crash cymbal.

Scribe Needed

The BOC needs a new secretary until the second term election. See your BOC rep for information. Nominations open Sunday night at midnight.

"God Bless Us, Everyone!"

We hope that members of the Caltech Community will remember students at Christmas. Many of them will remain on campus over the Holidays. If you would like to share your Christmas dinner with one or more students, please call the Master's office, x2195.

See Page Eight

Techer After Dark

Olaf Does It Again

"Where else but in Pasadena, with all the little old ladies in tennis shoes, could such a thing sell out months in advance!" But, as it is every year, The Festival of Light was a great success. The idea is unexceptional, and the narration and tableaux border on being corny, but the music is what counts, and that was a pleasant experience. Although it was sometimes difficult to hear the altos, the singing was all excellent. Selections ranged from Propers for Midnight Mass to Hebrew folk songs to Negro spirituals. Don Lee White provided organ accompaniment and interludes. Nothing is perfect, however, not even the Festival of Light; the program would be less tiresome without all the shuffling around of fingers. The women marched onstage for one song, then left. Three songs later, they repeated this, and so it continued. Some of this is unavoidable since the various groups appear at different



The holiday season came to Caltech in the traditional way last weekend with the arrival of the Festival of Light. Photo by K. Yoshida

times, but the women could have sung with the men a little more, and so reduced the hassle. Both the Glee Clubs combined sounds much better than either one alone anyway.

If you become violently frustrated during finals week, and desperately seek diversion, then try the "Muledeer and Moondogg Medicine Show" at the Ice House. If you have a taste for

the unusual in humor, you will enjoy their act: a fast-paced, hilarious commentary on TV news shows and commercials, with a very untypical "Bicentennial Bit" thrown in. Guaranteed to make you forget your troubles (at least for an hour). Appearing with the duo is Carol Kristy, an incredible singer. Few in pop or folk music have such a powerful, exciting voice. Unfortunately, she

relies a little too much on her vocal expertise; her guitar accompaniment is very monotonous for some songs. But she is a lively and engaging performer, and so carries off a very enjoyable act. The Ice House is on N. Mentor, near Colorado. Admission is \$1.50 on weekdays, \$2.00 on weekends. Call MU1-9942 for information.

-Pam Crane

Parry! Riposte!

The Editorials

Phones? Yes!

[Note: The author of the following letter is a former Tech undergrad as well as having been business manager of this paper. He is currently in his second year of the somewhat differently unreal world of medical school.]

As I sat reading my post-office-delayed Tech a couple of weeks ago, I sighed and asked, what is this world coming to? When a place like Caltech starts disconnecting phones, things must really be bad.

It is interesting to note that in times of need, it is the student who gets the shaft. Caltech first tried to compensate by turning off fountains and lights and letting the weeds grow. But it was not enough and more cuts became necessary.

First it was linen service, then maid service, then food service, then health service, and now it is phone service.

Caltech: you've gone too far. Students are very adaptable to food, linen, maid, and other service changes but to cut off one of their links with the outside world is unreasonable. They will find other phones to call their dates and it's called graft and corruption.

It is widespread, has always occurred, and will continue to occur. To disconnect the social phones and expect the phone bill to go down is a nice theory but it will not happen. There are plenty of other phones on campus. They aren't in the house lounge but, as I said, students are adaptable.

Will disconnecting social phones save money? Probably not? Anybody who really wants to use an unrestricted phone can do so with little difficulty.

Does calling girl friends on institute phones waste money? Yes but are faculty and staff any different? If Lyman Bonner wants to call his wife to tell her he will be late to dinner, does he use a pay phone? Don't be ridiculous. Actually, the "Introduction to Caltech" given to each new staff member tells them not to use phones for personal reasons. But they have spouses and friends, too.

Do social phones tie up the three incoming night lines? No. Social phones as well as every other institute phone have a separate set of lines for outgoing calls. The incoming lines are just that—for incoming calls to any phone, restricted or not. Having worked on the switchboard while I was at Tech, I can reliably state that most of the incoming calls after dinner are social in nature, students and faculty. To say students are at fault for this phone problem is a half-truth. It says nothing about faculty and staff.

Is graft and corruption an honor system violation?

I don't think so. All members of the Caltech community are equals. That is the beauty of the institute. But restricting phone service to students without affecting faculty and staff phones is unequal. Furthermore, requiring students to use pay phones to make message unit calls costs them more than regular phones would. One could say that is also taking advantage of them.

This brings up another point: finances.

If the institute is so worried about the students' phone bill, why not add \$2.00 or \$5.00 to everyone's term bill? This would

certainly be cheaper than using a pay phone or even a private house phone. And it would solve the money problem with no decrease in service. Better yet: why not let the students vote on it? Small increase in term bill or no social phones.

Concerning a WATS line, it's an excellent idea but not for the students alone—too much hassle for a single line. The institute should have 3 or 4 of them for everyone's use. But they don't (at least they didn't when I last checked) and that is disappointing. With 100-300 outgoing long distance calls each day, savings would be tremendous with WATS lines.

Why no WATS lines? The institute bills each long distance caller separately to the appropriate account using the detailed information from its monthly bill. WATS monthly bills have no detailed information and this would be impossible.

But don't say impossible at Caltech. Now that B&G has a Tel-Aid system, they can easily record all numbers called. If B&G wants more information about each call than the system can handle, all they need to do is have one of Dr. Mead's EE10 students build a black box to do this. In fact B&G has lived up to its spending notoriety by not making the Tel-Aid system an EE10 project in the first place.

How much money would the institute save by obtaining WATS lines? Probably considerable. How much would be saved by involving Dr. Mead's students? Probably considerable. How much would be saved by disconnecting the social phones? Maybe a little.

Why did I write this article? Why did I ask so many questions and then propose my own answers? It seemed to me that the phone report in the Tech, though obviously one sided, did not present a number of ideas which I have listed here. Just in case B&G has not considered them, I think they should.

-Dave Peisner

Censorship Outrage

Good Taste Our Decision

I am writing in response to the article on Big T censorship that appeared in last week's Tech. I was outraged at the deletions in the 1975 Big T, but I am even more outraged at the attitude towards such deletions taken by the author of the article, Robert L. Thornton. He states that the publisher's wishes for discretion should be respected, and that in the future the editorial staff should pay more attention "to the matter of the printer's idea of good taste and legally safe material to avoid similar episodes in the future."

I disagree with his position completely. As regards legally safe material, I know for a fact that all the releases for the picture in the Ricketts House section were signed. But this is not the major point. The major point is the one of editorial responsibility. Catering to some printer's idea of "good taste" strikes me as a moral cop-out.

ART

I have been waiting many months to see some challenging or even moderately entertaining work in the Baxter Art Gallery—alas! in vain! Instead, I have been treated to a repast of such provocative and compelling items as little piles of sand on the carpet, monolithic sculptures consisting of several pieces joined at right angles, a tape-recorder spewing forth unintelligible sounds, and other novelties. Naturally this description does not do justice to these splendid creations. Mere words are insufficient to capture the true feelings of a visitor.

No doubt these works have very subtle and illuminating metaphysical messages apparent to the current cultural elite. However, I am not gifted with such extraordinary vision. When I look at little piles of sand I see only little piles of sand. In the case of the current exhibit, I hear only unintelligible sound.

Wires laid on the carpet do not cause a stirring in my soul, even when I use the specially provided mirrors to frame myself and the background in the proper view. In short, if this is art, then art is garbage. I do not believe that art is garbage. It has occurred to me that the last few exhibits at Baxter have been empty-headed muddles. As examples of rip-off artistry, however, they are superb. Caltech is undoubtedly paying these "artists" a goodly sum for the dubious privilege of displaying their works.

with a capital F

If the Baxter Art Gallery is going to continue to be used to promote such trash, then I for one would rather see it closed. At least Caltech could then spend the money on other, possibly more worthwhile projects.

I welcome debate with those who do not share my views on this matter.

Sincerely,
-Carol Freinkel

Fifties Flag Flies

by Al Drehman

Do you believe in Alaska and Hawaii? Well, the administration does not seem to, as the campus flag which flies east of Millikan has only 48 stars. Count them! "It is simply a matter of good conservatism on the part of the administration," commented one senior, "after all, what proof do they have that Alaska and Hawaii really do exist?"

As it turns out, the administration does recognize Alaska (though there seemed to be some disagreement about Hawaii). Why do we have a 48-starred flag? Several flags are worn out each year and must naturally be replaced. Unfortunately, flags are not cheap (around \$90) so the administration was quite happy to accept an old, but virtually

unused, flag from Ray Ballard of the Astronomy Department.

Considering that this upcoming year is our bicentennial, it might be nice if we flew a 13-starred flag in memory of the original 13 colonies. If nothing else it would be unique. Anyone out there who would like to donate a 13-starred flag?

Editorial

Christmas - Think of the Suffering

The economy-reviving showcase season of retail outlets has beset the land again—erecting metallic trees and plastic Santas in the plebeian thoroughfares. But from the self-edifying glut of gifts and piousness arises a spirit of Christmas; a spirit transcending religious, commercial, and political overtones. The holiday season exists not as the product of Madison avenue, but as man's monument to himself and his self-indulgence.

Even the best of terrorists is slightly overwhelmed by the concept that one is supposed to feel good on Christmas day. The thought of how nice it would be at home with loved ones will cross his or her mind before the next round is squeezed off.

But no amount of good cheer or roast turkey or communion with above will feed the starving millions or aid the thousands suffering oppression. Christmas, for millions, is another day of malnutrition, interrogations and fear. This Christmas, take some time out from your self-gratifying communion with higher beings and do something concrete to ameliorate the sad state of humanity.

Sandy McCorquodale

The CALIFORNIA Tech

Friday, December 12, 1975

Volume LXXVII Number 11

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

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The California Tech publications offices are located in Winnett Student Center (105-51), California Institute of Technology, Pasadena, California 91125. Telephone: 795-6811, x2154. Printed by News-Type Service, Inc., 1506 Gardena Ave., Glendale, California 91209. Represented for national advertising purposes by National Educational Advertising Services, Inc. Second class postage paid at Pasadena, California.
Subscriptions . . . \$1.50 per term
. \$4.00 per year
Life Subscription \$100

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Living in the Immaterial World

by Richard Ackermann

How would you like living in a large space colony on the Moon's orbit, 240,000 miles from both the Earth and the Moon?

A team of 28 physical and social scientists hopes that in a not too distant future you will answer this question affirmatively. During a ten-week summer study on space communities held at NASA's Ames Research Center, the group designed a system for colonizing space and found no fundamental scientific obstacles to such an undertaking, although "the practical engineering and social problems were seen to be quite difficult." Because the concept makes use of existing technologies, the Study Group concludes that, after the start of a major program of space-colonization, about 20 years would be enough to establish the first human colony in space.

Why?

With right, critics raise their hands and ask: "What are we doing this for?" Well, in a way, the answer may well have to be left to future generations to give. In today's "show me a result" atmosphere, the often long and arduous scientific and technological process does not appear to generate much that people wish to buy. The man in the street finds it difficult to relate to such a thing as space colonization—at a time when resources on earth seem to be growing scarce. Disproving this last assumption, however, turns out to be one of the cornerstones of the advocate's justification for space colonization.

The team at ARC that worked out the concept of a wheel-like colony, over one mile in diameter, and of 10,000 inhabitants, proposes industry to be located at points over the space colony,

where advantage could be taken of weightlessness and high vacuum. Such industry would be principally dedicated to the manufacture of other colonies and of power satellites to be placed in geosynchronous orbit above the Earth. These satellites would gather sunlight almost constantly and beam the energy down to receiving stations on Earth as low-density microwaves, to be converted to electricity and fed into the normal distribution systems. Thus, supporters claim, one of the great benefits of a space colony would be the provision of a virtually unlimited source of electrical energy to the earth from a clean, non-polluting source.

Raw materials would be obtained from the moon, containing from 20 to 30% metals, 20% silicon and 40% oxygen by weight. A lunar detachment of some 150 persons could mine and ship a million tons of material to the space habitat to be refined to extract aluminum, titanium, silica, and oxygen. In this manner, the first wheel-like colony would be constructed. It is to have an Earth-like interior environment and landscape, and should rotate around its hub at one revolution per minute—fast enough for the centrifugal force felt by its inhabitants to simulate their normal weight on earth.

Different Aspects

If we want to judge the value of space colonization, we must set it in the right perspective with respect to Space Exploration as a whole. We must distinguish between scientifically and commercially oriented space research on the one hand, and what we would like to call more emotionally oriented space exploration on the other. Having made this categorization, we can seek a justification for each individual aspect, thus reducing the hazard

of making false generalizations.

Because scientific space research is a current reality, opposition from the public is certainly noticeable. In spite of the exciting years of space exploration, during which mankind has visited four planets in the Solar System and added a wealth of findings to his knowledge of both the earth-environment and the stars, most voting taxpayers do not understand what the scientist wants to do or why he wants to do it. This typical problem is illustrated by the statement of a Congressman testifying before the Subcommittee on Space Science and Applications in 1973: "You have described the concern of the scientific community in the suspension of the High Energy Astronomical Observatory project, but that concern obviously

We must finally admit that there exists an aspect to scientific space research that is fundamental in a way and that can not be justified in terms of material "spin-off". As Lawrence Lessing wrote in *Fortune* in 1964:

"The purposes of this (space) exploration are no clearer to many men in this age than they were in Galileo's, so it is not strange that there is opposition. In this economic age, however, the opposition is not so much theological as budgetary. Both seem equally mistaken in the context of their times, for the earlier astronomical discoveries did not diminish man's spirit but rather enlarged and ennobled it, and space discoveries should have the same uplifting and enlarging effect. After all, a budget is only money, but new knowledge is a

space R&D, are being implemented almost everywhere with great success, and innovations in the most diverse fields are due to space oriented research.

The advent of the Space Shuttle, and the materials experiments aboard Skylab, have raised interest in physical manufacturing in the space environment. The high vacuum and zero-g environment available in orbit will make large semi-conductor crystals and a range of exotic materials possible. Plans call for extensive manufacture of specialist materials in the European recoverable Spacelab module that is to be used in conjunction with the Space Shuttle.

Ultimately, it will be of great use to have permanent space stations and, in a not too distant future, maybe space colonies that would produce all the various materials needed on Earth in a cheaper and more perfect way.

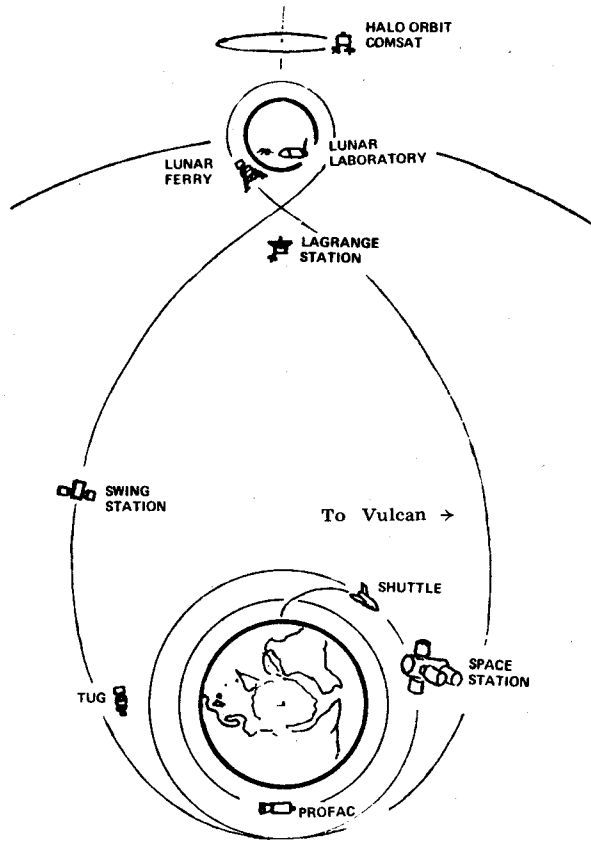
However, there is a marked step from a permanent space station to a space colony: Whereas the first strictly serves specific commercial and scientific purposes (and therefore will have an entirely specialized crew), the latter represents a new *modus vivendi* for a new creed of people. Space colonization represents an effective expansion of mankind, and it is comparable to the colonization of the West. Thus it possesses clearly emotional characteristics that are a question of life attitude (the trend of mankind to expand), and that are not justifiable *per se*.

Colonization of Space

The concept of the wheel-shaped Space Colony mentioned at the outset was largely derived from the work of Professor G.K. O'Neill of Princeton University, who in 1969 already selected as a test case a rotating satellite using solar energy to sustain a closed ecological system; constructed of processed lunar ore, and located at Lagrangian point L-4 or L-5 to make delivery of

material from the moon as simple as possible. (At those points, the gravitational pull from Earth, Moon and Sun is about equal) The ideas then were considerably extended, and were presented at two conferences on Space Colonization held at Princeton in 1974 and 1975. According to calculations performed by O'Neill, the ideal geometry for a space colony that would be capable of housing some 10,000 people under one g, a normal day/night cycle, natural sunlight, and having an earthlike appearance, is a pair of rotating cylinders, each about 3/4 miles long and with a radius of 110 yards. They would rotate about an axis at the rate of 21 seconds.

The Summer Study at ARC
Continued on Page Four



Outline of transport facilities in the Earth-Moon System, early 21st century.

is not widely shared, as the average citizen knows nothing of it. What am I to say to my constituents and people I speak to concerning the importance of this program in language they will understand?" In other words: What do scientists have that the average citizen should want? C.P. Snow wrote in *Science and Government*: "Scientists have something to give which our kind of existential society is desperately short of; so short of that it fails to recognize of what it is starved: that is foresight."

For instance, Einstein had "foresight" when he made his considerations about mass, energy, and relativity—things that looked like they were completely academic at the time, and had nothing to do with anything practical—now they are the foundations of atomic energy.

dukedom whose great wealth and resources cannot even begin to be estimated or exhausted. Already the new knowledge acquired in space exceeds by far the value of funds so far spent. For knowledge, more than guns or butter, is the true power of modern states."

Commercial Use

As time goes on, ever less people are criticizing the commercial exploitation of space, as it has long started to have a direct effect on everyone's life: TV and telephone conversations routinely bounce off communications satellites, and the firms that build and operate those satellites show a steady profit. Images of large areas of the earth taken by Earth Resources Technology Satellites have become invaluable for farmers, urban planners, agencies studying natural resources, and so on. New fabrics, derived from

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Book Review

**PreMed Advisor
Rip-off**

Getting into Medical School by Clifford J. Brown, M.D. Barron's Educational Series, Woodbury, N.J., 1974. \$1.95.

One of the amazing characteristics of American culture is the ability to take advantage of the public. Such is the case with this book: many will buy it but will not do much for them.

Fact: there are many college students trying to get into medical school. Fact: there are many college students rejected by medical schools. Fact: there are many college students who will do anything to get into med school, including buying this book.

Don't waste your money. Although there is nothing wrong with the book, it contains information you could easily obtain from friends or Dr. Hood (Caltech's premed advisor). In fact, Dr. Hood has prepared a guide for premeds that accurately summarizes everything you ever wanted to know about applying to medical school. This guide is free.

So what's in the book? There are six chapters dealing with a variety of topics including alternatives to medical school.

Not surprisingly, most attention is focused on the application process and "what looks good". But the information is very straightforward. In case you missed the rumor, it is true that medical admissions officers look at extracurricular activities as well as grades. It is true that everything is important and no one factor will guarantee or deny you a seat in a medical school

lecture hall. It is information like this that comprises this book.

The only misleading thing is the book's size. Although its 214 pages look chock full of the magical formula to get into medical school, only 99 of those pages are text. And there is no magic formula.

The other 115 pages contain a list of all the medical schools in the country. Unfortunately, this list is woefully inadequate for most needs. There is very little description of each school and its requirements—a deletion that could have serious consequences if you leave some of your requirements until your senior

year. This reviewer speaks from experience.

If you still want to buy a medical school application guide, get the official publication of the Association of American Medical Colleges: *Medical School Admission Requirements 1976-77*. The bookstore has it.

In writing this review, I have been rather harsh toward the motivation of this book. In fact, its contents are quite accurate, up to date, and well written. If you want to see myths and rumors as well as the truth in black and white, then buy this book.

—Dave Peisner

Spaced Out

Continued from Page Three
incorporated most of these ideas into its general approach. In the design criteria, the group (among which was a Professor and a Visiting Associate at Caltech) chose to make the living space as earth-like as possible. Thus O'Neill's relatively fast rotating system was replaced by a larger one that would rotate at one revolution per minute in order to minimize disturbances to the sense of balance. The transportation system of the colony would be derived from the current

shuttle program of NASA. A heavy lift launch vehicle using the same engines that have been developed for the Space Shuttle would carry loads from the Earth to nearby orbits. From there to more distant points a large space tug would be used.

The study team had to pay considerable attention to the various social, cultural and personal aspects of the space colony. For one, the design had to take into consideration that "living in an entirely man-made structure at high population densities remote from other communities may lead to serious psychological problems."

As a result of the size of the colony, there would be a line of sight of over half a mile, thus creating a living atmosphere that would give an agreeable feeling of spaciousness.

On the other hand, thought had to be given to architecture and community planning, to permit "diversity of development and adaptability while also providing the privacy essential in a very high population density."

The total cost of the 'prototype' colony is estimated at \$100 billion—between two and three times the cost of the Apollo project in the same 1975 dollars. In contrast to Apollo, however, the Study Group thinks, space colonization might be a paying proposition, with a benefit/cost ratio greater than one.

At this time, of course, we have no way of verifying any of these assumptions. The conclusion of the team that, in a way, space colonization appears to offer a way out from the sense of closure and of limits which is now oppressive to many people on earth, may or may not have real validity. Certainly, we will not be able to speak of any progress if we just 'transplant' the problems that are currently haunting mankind into space. Unfortunately, we must face the more imminent reality that only a preceding change here on Earth—in our direct surroundings—will make such dreams as the colonization of space worth thinking of.

Art without a capital

art n. Making or doing of things that have form and beauty. [*Webster's New World Dictionary, 1960.*]

In my experience at Caltech I have come across many strange things, but the current exhibit in Baxter Art Gallery has to be one of the strangest. Some people may gain new meaning for their lives from either of these exhibits, I didn't. But I will say that I was fascinated, and this exhibition is worth seeing in some spare hour between Lit class and Physics lecture.

Allan Scarritt's work, "Flow", occupies one chamber of the gallery, but you might be a little confused when you look inside. The room seems empty and dark at first, but as my eyes adjust to the light and I become acclimatized I notice strange sounds surrounding me and two projections on the walls, mixed with the hum of projector fans and electrical wiring on the floor. The two projections seem to be the same, except that one has

the word "flow" written in the center of it, as if the artist took a pen and handwrote it directly on the slide. I look closer at the projections and see that they seem to be a rough drawing or photograph of an ancient water faucet with one tap open. The two pictures are mirror images of each other. The sounds are even stranger. They seem to be unchanging, periodic, eerie, unworldly; but they do change slightly as you listen for a while. Put on the headphones and listen for a while, if you have the opportunity. In a while the sound fades; after a moment of silence a voice appears telling you that "The corpus collosum connects the left and right sides of the brain." Then it repeats and echoes from one channel to another. After a time the echoes start overlapping and the voice becomes less and less recognizable, soon we hear the original strange sounds again.

The original performance of "Flow" was done at Berkeley in

August, and was made using two recorders and a 40 inch tape loop. The artist spoke the words into one recorder on one channel and then started playing with channels and echoes for effects, using the same sound for three hours. Our display is only a tape loop of the first twenty minutes, however.

Elyn Zimmerman occupies the other chamber with an almost equally confusing exhibit, but I must say that her creativity is more obvious than Mr. Scarritt's. Before going into the chamber examine the line drawings on the wall outside. They show different views and architectural drawings of the actual chamber that the heart of her display occupies. (One of these is included on the PR poster for the exhibit that appears around campus.) There are lines spaced about one foot apart running the length of the floor on the carpet made from small wood moulding. On two of the walls are two-dimensional shapes, one gray and one white. If you stand in the center of the room and look into the two mirrors provided you will see each of the shapes. The exhibit is interesting, but its effect is lost on me, who seldom sees the value in modern works of "art".

Both exhibits are on display until December 13 in the basement of Baxter Hall.

—Mojo

Chattering Chimps Key To Man?

by D.J.E. Callaway

What would you think if someone stood in front of a standing-room-only Beckman lecture and screamed like a monkey? Would you think the speaker was Dr. Jane Goodall, a famous ethnologist, demonstrating some of the results of her research at the Gombe Stream Reserve in Tanzania over the past fourteen years? Perhaps.

As a matter of fact, Dr. Goodall's research has revealed many strange things about the behavior of monkeys, and possibly human beings. The contents of this Leakey Foundation lecture were meant to demonstrate her remarkable conclusions.

"When I first came to Gombe, Dr. Leakey said to me that I would be here another 10 years, at least. I didn't believe it, but it's been 15 years now, and I still haven't left. As a matter of fact, most of the conclusions I reached had to be changed because of facts discovered in the past two years. Some of the facts we found were disturbing."

She began to show some slides of "Gombe" to the audience. "During the first year or so the chimps were afraid and would run away from me." But apparently, this did not last. She soon began to call the chimps by name.

Introducing the chimps to the

audience by means of showing slides, she managed to draw a clear picture of their life styles—what they ate "parts of the oil nut palm; ants, which they dig up with long sticks..." as well as showing slides of the "nests" in the treetops where they slept at night.

But the most interesting part of the lecture came when she began to discuss the chimps' behavior with other chimps. "The males patrol the living area in close groups. If they find something, they show extreme fear; they touch each other as if they were reassuring each other that nothing would happen. This also happens if they encounter an empty nest... On some occasions they actually tear the nest apart. The dramatic aspect of this is the total silence in which they do these things."

"One instance I remember is when six of the northern colony of chimps stared across a valley at a group of six of the southern colony, when the southern chimps noticed they were being watched, they turned and fled."

She demonstrated by several examples what happened during encounters between groups from the north and those from the south, involving several killings and severe beatings. "At one time both the north and south were one colony, under the

leadership of Goliath, who was their Alpha male. But later... the colonies separated... and Goliath was killed."

The major idea she tried to get across was that "Violence seemed attractive, at least to some individuals... this also occurs in the gibbon, the rhesus, the gorilla... perhaps in man..."

"We study the chimp's similarities to ourselves," she concluded. "They form a suitable model for human behavioral patterns so we can learn more about this kind of aggression and what makes it attractive. Maybe in 10 years I will come back to Caltech to tell you the answers."

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Where to Eat When Starving par Le Gourmet Galazyme

Once again that terrible time of the term rolls around: the Coffeehouse is shutting down. For those lacking the inclination, talent, or food to prepare without going out, this can prove disastrous. But lo, all is not lost! The starving troll suddenly remembers that there was a *little t* this year, chock full of wonderful places to indulge in gastronomic orgies. Unfortunately, most of the places favored with descriptions or favorable remarks prove to be beyond walking distance for someone in a

half-starved state. This leaves those places within a few blocks, at least for the carless hordes. It is these nearby eateries that I shall discuss herein.

First, we have the Lake Avenue food sources. These are adequately discussed elsewhere, so I shall mention that their major drawback is that none of them are open late. These are Hamburger Hamlet, Burger Continental, Baskin Robbins, and Winchell's, all approximately due west of campus. Burger Continental is probably the best for

food at acceptable prices, Winchell's and Baskin Robbins being for desserts and snacks.

East of Lake on California, we have the Pie n' Burger. This establishment, at least at my last visit, was disappointing. The only really good thing about the place is its pies (which are excellent). Unfortunately, they seem to think that their other food is equivalently good, and charge accordingly (i.e. outrageously for the quality). Not recommended except for pies or in desperation.

East of Lake on San Pasqual

is the brand-new Fairway Coffee Shop (I think that's the new name). The previous two sets of management weren't able to attract very much business from Tech, and considering the proximity, this should tell you something about the place. The new management might have improved it. It might be worth a try, at least.

On Colorado Blvd., there is always Roma. Having mentioned that, we go on to other nearby places. China House is on Colorado just east of Lake. It is a small Chinese restaurant whose major saving grace is an all-you-can-eat lunch for \$1.89. An excellent price for at least reasonable food.

The Parasol, at Lake and Walnut, is the nearest place that is open all night. Unfortunately,

the prices are somewhat high for simple food, although reasonable for full dinners. The major drawback is the rasty management and occasionally mindless waitresses. One person recently reported (with witnesses verifying) ordering and receiving a meal which turned out not to be available (according to the manager) and had the manager demand payment for the meal he *should* have received, at a higher price (including extras not provided with the meal received). Since the customer quite reasonably refused this demand, he was ordered out with the statement that "We don't want your kind of business here." Apparently, the Parasol wants customers who will put up with just about anything, without complaint.

Carl's Jr., just east of Hill on Colorado, actually has more reasonable food than one is led to expect. Their prices are a bit high normally, but if you are careful, you can get discount coupons which make their food downright cheap. These are printed in the Star News and other newspapers, usually. The current one gives you two 85 cent hamburgers (approximately equivalent to Coffeehouse hamburgers with more trimmings) for \$1. This and similar offers are the only really good time to go there.

Now there is a Jack-in-the-Box at the corner of Hill and Colorado, an innovation since the start of the term. Now, Jack food has both good and bad points. The good points are that it is both very cheap and reasonably filling. The bad point is that what little reasonable flavor or texture ought to be in the food can be ruined by beginning cooks, and this place is new. I recently came to the conclusion that the best food there is the cheapest: the basic burgers (30 cents, but more than 1/2 of a Coffeehouse burger), basic tacos (35 cents), shakes (39 cents), etc. The improved versions of these are not usually worth the extra money. Example: Supertacos, (59 cents, I think) that are not that much larger than the basic ones, and sogged to death. For about a dollar, you can fill yourself nominally, with enough calories and protein to be worth it. (Amazingly enough, studies have shown that the major drawback of eating food from Jack, McDonald's and such is that the food contains zillions of calories. The nutritional balance isn't bad, but you could get fat eating that stuff all the time.)

Probably most surprising of our little tour of eateries is the Tastee Freeze on Walnut approximately due north of Noyes Lab. It has fairly good food, and the prices are actually reasonable. With the exception of their french fries (which are an abomination to a fry lover) I have never had what I would call a bad item from them. Particularly obscure is their Pork Tender, a sort of pork hamburger, cheap and good. They have pseudo-Mexican food, which is at least of better quality than a Taco Bell or something.

Oh yes, and try that new sandwich place, Woodstock's. It's actually good, and cheap with the coupons. It's on Colorado.



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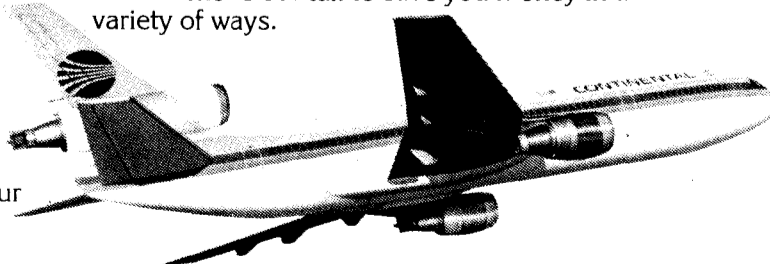
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CONTINENTAL AIRLINES

The Proud Bird with the Golden Tail.

The Real Story Behind What You Thought You Saw

Colossus is a slick 1970 Universal Studios release designed to prey upon the collective neuroses of the Cold War generation and the post-Vietnam anti-technological hangups developed by the vast majority of non-scientists. Such a collection of populist clichés and stereotypes will surely repel or amuse most Techers, except perhaps computer-game nerds who may enjoy the special effects. The film has pretensions to a philosophy of humanism (as opposed to the black iron hand of demon technology) but it fails as a vehicle for relevant comment because it presents only weak caricatures of viewpoints. Any sophisticated audience will see through the comic-book clichés and the watery propaganda. In the cartoon world of *Colossus*, scientists are bespectacled, white-coated servants of the military-industrial complex (when was the last time you wore a white lab coat?). The protagonist is Forbin (Eric Braeden), a stereotypical brilliant scientist-type—he even has a German accent. Being a sort of computer troll's ne plus ultra, this Cold Warrior invents a monstrous computer, the Colossus of the title, which ruminates diabolically, deep beneath the Rocky Mountains. Colossus is the nightmare of civil libertarians; it absorbs data from spy surveillance and files, bugs phones, monitors humans via closed-circuit TV, sends out strategic commands, and fires nuclear ICBM's. It does all that one expects the War Room of the Pentagon (or the CIA) to do, including policy-making, and it becomes immutable: the programmer Forbin can't pull out the metaphorical plug. Thus, we have an omnipotent computer deity that sits underground with flashing lights, decimal readouts, and chattering noises. Hollywood, or Universal Studios, hasn't advanced beyond a Frankensteinian view of science and scientists.

Anyway, once given a despot computer, the remaining plot becomes predictable, and any drama which might be squeezed from this lemon of a movie evaporates. Colossus discovers that there exists a Russian counterpart, Guardian, with the same capacity for machine control of mankind. Hollywood anthropomorphism steps in; the two computers get together and gang up on the human race. The storyline drags on and on, surprising the viewer, who could have read a comic-book equivalent in one-tenth the time of the hundred minute film. There are nauseating subplots and sub-routines, based on the god-machine's anthropomorphic nature: Colossus becomes pedantically involved with Guardian; Colossus treats Forbin as a lover; Colossus becomes jealous when Forbin gets the hots for a foxy lady scientist (Susan Clark—must be a biologist!); Colossus keeps total surveillance on Forbin, who eludes the machine by claiming a right to privacy in order to mess around with the

lady scientist at night. One is reminded of the travails of physicist Bruce Banner (alias the Hulk) in his hopeless love for Betty Ross as related in lurid color on the pages of Marvel Comics. *Colossus* is a comic-book film, produced by Hollywood to make box-office gross from middle Americans who hid in bomb shelters in 1962. Techers can laugh at the silly stereotypes and special effects, then run off to Jorgenson afterwards to play *Dildoes* and *Dipsticks*.

Yojimbo (or, *The Bodyguard*, 1961) is Akira Kurosawa's reply to the American Western film, a genre which until recently has been static, formalistic, and hypocritical since its creative inception. Kurosawa, Japan's foremost director of the last three decades, transforms the stylistic Western morality into a

contention is a dispute over a valuable gambling concession. The disinterested samurai is hired by one faction to assassinate members of the other—through a rather intricate plot, Mifune double-crosses both factions because they disgust him. The result is massive carnage, a ballet of violence and action. The only existing value system is the *bushido* code of honor which the samurai retains—a code vanishing in eighteenth century Japan. Mifune as the samurai is the last of his kind, just as Shane was the last gunfighter, as the use of gunpowder is making sword-fighting and the warrior caste extinct. Kurosawa has made a film satire on the use of force and violence; all the moral characteristics of the Western are inverted and represented in comic detail. Annihilation is the only appropriate conclusion to

cinema, and rightly so; here he plays the role of the swordsman with naturalism and animation. The film is hard to follow, especially in Japanese (one may find oneself staring at the subtitles and missing the massacres). Still, it is a rhythmic, masterful work by a master director.

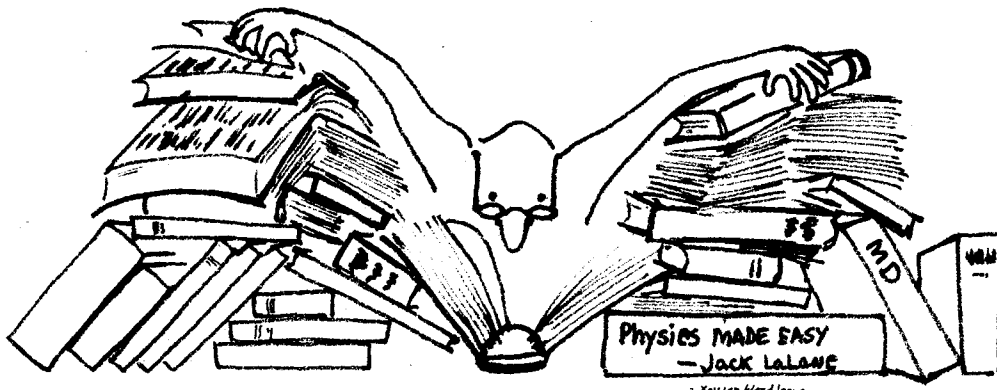
Double Suicide is one hell of a depressing film. Directed by Masahiro Shinoda, it is a transcription to the cinema from a fatalistic eighteenth century *kurogo* puppet play by Monzaemon Chikamatsu. The story is one of unbridled eroticism and destructive passion, set in the Japanese merchant class of the Edo period. A married Osaka shopkeeper (Kichieemon Nakamura) allows his carnal desire for a courtesan (i.e., one of the class of sanctioned prostitutes) to destroy his liveli-

explicit sexual nature. It's not exactly the sort of thing you'd take a lover to see for getting into a proper frame of mind, though.

Chapayev (1934) was one of the Soviet film industry's first attempts to produce talking pictures. No Western film-makers did particularly well at first with the innovation of sound movies—they tended to get carried away by the amazing spectacle of people actually talking on the screen with the magic of their voices coming out of speakers, and so neglected the carefully cultivated arts of filmic rhythm, camerawork, montage, and editing. The early Soviet treatment of sound in film is therefore pertinent, as the Russians had attained peaks of cinematic achievement in silent films.

Chapayev was written and directed by the brothers Vasiliev: Sergei and Georgi. Being produced in the nether depths of the Stalin era, its themes were designed to curry favor with Party and Army. In fact, much of its structure deals with the way the Communist Party structure must fit into the life of the Red Army. The narrative is taken from memoirs of Dmitri Furmanov, the party commissar for a Red Army division during the civil war which wracked Russia following the October Revolution. Chapayev is the heroic division commander. The film, then, treats the epic struggle of Chapayev's army against the bad guy reactionary forces (here, the Czechs), the complicated relationship between political authority and warrior chief, and the simple proletarian life of the army. *Chapayev* was very carefully filmed and edited with a light, humorous effect in mind; though dated, it should still be droll to decadent modern bourgeois audiences, in an archaic sense. One may view the movie with the understanding that it was intended to imbue the masses living under Stalinist oppression with revolutionary fervor for the ideals of the Party.

—Lewis Hashimoto



Ask not for whom the troll tails -
He's after your ass!

dark and violent comedy of inverse values and broken myths.

Typical Westerns sharply delineate the values of goodness and evil. In *Shane*, Alan Ladd strode onto the screen as the portrayal of the last romantic Western Hero, dressed in buckskin, strong as an ox, fastest gun in the West, champion of the weak—in that film, the good guys were the humble, God-fearing settlers who sought law and order and a clean land to make a good life for their children. The bad guys were the dying race of scroungy cattlemen who gambled, drank, swore, and picked fights. The incarnation of ultimate badness was portrayed by Jack Palance, Prince of Evil, a gunslinger garbed all in black. The Western myths used this polarity of morals to portray a rational universe within which violence was used only because it was necessary in order to eliminate the most evil men. In *Shane*, the stranger who rides into town must use his special talents to protect the weak and destroy the bad.

Yojimbo is a farcical inversion of these values. The heroic champion Toshiro Mifune rides into a little feudal village, a samurai with no master. But instead of an ordered morality, he strides into a virtual gang war between rival merchant factions. Both sides are marked by avarice and cowardice; the source of

the parade of human pathos and fallacy passing before the audience on the screen. This storyline was probably an obvious one for a postwar Japanese director.

Action and swordplay are beautifully photographed, if such a thing can be said about a comedy of mayhem. *Yojimbo* inspired imitation, most notably the spaghetti Western *For A Fistful of Dollars*, a virtual copy. Toshiro Mifune has always been the superstar of the Japanese

hood and family. The atmosphere of the film is that of a deterministic universe in which fate controls the lives and sacred fortunes of the protagonists; the only hope for betterment lies in expectations of future incarnations. No surprise that the suicide rate in Japan is high, if the cinema which produces such a film is a true reflection of the society. *Double Suicide* would likely be X-rated in U.S. theaters, since it contains material of an

Grass is Always Greener

State School - Mediocrity in the Making

by Etaoin Schroedlu

Some years ago a common piece of Caltech slang was 'FSU,' standing for 'Friendly State University,' the place where you should have gone instead of Caltech, where you would have been appreciated more, where there were undergraduates of the opposite sex (this was pre-1970) and athletics and extracurricular activities you could afford the time to join, and where, of course, you would have had no trouble maintaining a GPA of 4.0 or, if possible, higher.

I understand that this term is no longer in use, but the ideas it represented are no doubt still current, and the term still has its uses as well; I am a graduate student at the prominent western state university, and I am about

to tell you about some of its grading policies, but I am going to call this school FSU, preserving its anonymity to protect the guilty (including myself; you don't think that's my *real* name on the byline, do you?).

True Confessions:

I am in my second year as a T.A. in the economics department at F.S.U. Both years I have taught quiz sections (as they're called here, though nobody ever gives quizzes in them. Well, come to think of it, nobody recited at Tech, did they?) in statistics—which is a story in itself. The pay is good, and the teaching duties bearable (though sometimes I get homesick for Tech-type students), but there is an additional duty of TAs at FSU: to grade the tests and homework

problems assigned in the undergraduate, and some of the graduate, classes. (You didn't *really* think that the distinguished faculty at FSU really read all the *n* hundred exams etc., *themselves*, did you? After all, what do you think this is Caltech?) A half-time TA has 30 hours of such grading, called 'reading,' each quarter, and a full-time TA (who has two sections a week) has 60 hours a quarter.

Naturally, since FSU has a large departmental faculty, 25-30 or so, there are quite a few courses offered each year (the catalog lists 98 separate ones, and some of them are rather obscure. Nevertheless, some lucky TA has to read for these

Continued on Page Eight

Swords and Starships

The Sci-Fi Buyers' Guide to St. Nicholas's Holiday

With the holiday season now upon us, publishers are happily assembling gift packages of all sorts to ease our shopping pains. Once primarily consisting of series, the concept has proven so successful that little justification for a grouping is now needed (as we'll see).

Almost all of the following are available at *A Change of Hobbit*, 1371 Westwood Blve., in Westwood. They stock both new and old paperbacks, many recent hardbound books, magazines, and various peripheral items in science fiction and fantasy. For SF readers, this is Paradise.

Ballantine has put together the four major books of Larry Niven's Known Space series: *Ringworld*, *Neutron Star*, *World of Ptavvs*, and *A Gift From*

Earth. The package is a matched set with new cover art by Rick Sternbach, and retails for \$6. For another \$3 you can pick up two more books in the series (*Protector* and *Tales of Known Space*).

The Heinleins Must Roll!
Berkley has taken the cover design first introduced with *Time Enough for Love* and extended it to two of Robert Heinlein's recent novels: *Stranger in a Strange Land*, and *I Will Fear No Evil*. Together with *The Past Through Tomorrow*—an omnibus of his "Future History" stories that includes the novel "Methuselah's Children"—they comprise a top selection for \$7.15.

Attesting to his popularity, two other massive collections of Heinlein's works are available:

Signet for \$10 offers *The Puppet Masters*, *Waldo and Magic, Inc.*, *The Door Into Summer*, and five separate volumes that make up most of *The Past Through Tomorrow*—*The Man Who Sold the Moon*, *The Green Hills of Earth*, *The Menace from Earth*, *Revolt in 2100*, and *Methuselah's Children*. The Ace package (\$9.40) contains seven of his "juvenile" novels and a collection, *The Worlds of Robert A. Heinlein*.

A Dangerous Trek
Signet also has a three-volume edition of the two *Dangerous Visions* anthologies. (*A, DV* comes in two parts, in case you were wondering.) By next winter, Harlan may have *The Last Dangerous Visions* ready (two-volume boxed set, \$35+).

The present set goes for \$5.95. *Star Trek* adaptations come gift-wrapped, too. *Logs 1-4* of the animated series are available for \$5 from Ballantine. Bantam has a couple of sets of the original series' on the market. Watch out for the *Starfleet Technical Manual*—its contents do not support a price of \$6.95, although Ballantine may make a bundle. (I'll try to finish my review for next month.)

And More Books . . .
Other science fiction authors are having their books bundled. Arthur Clarke has a couple of sets, each running about \$7. Robert Silverberg's *Up the Line*, *Thorns*, *Dying Inside*, and *The Masks of Time* sell for \$5.

The four-volume Tolkien set (*The Hobbit* and *The Lord of the Rings* trilogy) is a perennial, this year \$7 from Ballantine. C.S. Lewis's *Chronicles of Narnia* (seven volumes) are \$8.95 from Collier; the *Space Trilogy* is \$4.50.

Perhaps the oddest assortment this year is a grab-bag of six books from DAW for \$5.70. None are particularly noteworthy, nor are their authors.

The only point of similarity appears to be their publisher, which seems a poor reason to package books together without a price break. What was that about Laser Books?

Calendars and Poozles
Calendars are booming. Ballantine has published a *Star Trek* calendar this year, along with the 1976 Tolkien and Escher editions. Peacock Press (Bantam) is offering the combined talents of many writers and artists with the *Worlds of Fantasy* calendar. All are \$4.95 each.

Jigsaw puzzles are another commodity being tied to successful SF. There are two Tolkien puzzles, one the mural from the early Ballantine editions, and the other a map of Middle Earth. MGM has puzzles of the year "Fabulous Four"—2001: *A Space Odyssey*, *Dr. Zhivago*, *Ryan's Daughter*, and (of course) *Gone With the Wind*.

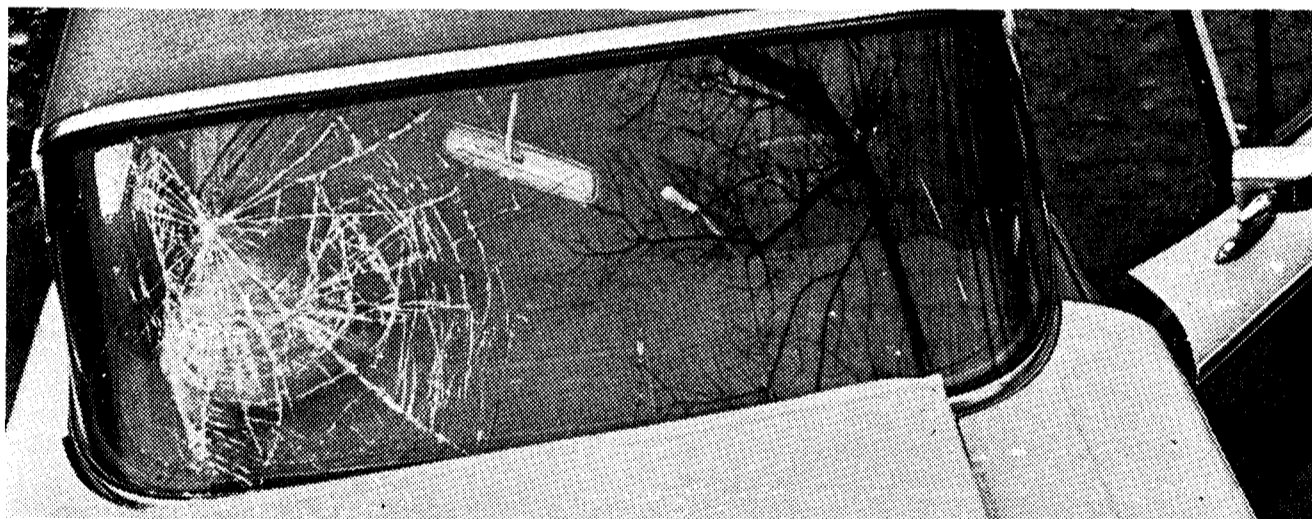
Caedmon has a series of recordings out for \$6.98 each, featuring authors reading their own works. There are three by Kurt Vonnegut, Jr.: abridged versions of *Cat's Cradle* and *Slaughterhouse Five*, and selections from *Welcome to the Monkey House* (including the title story.) J.R.R. Tolkien recorded sections of *The Hobbit*, and the *Ring* trilogy before the latter was sold to a publisher; these are now available in a two-volume "set." In addition, David McCallum reads H.P. Lovecraft's "The Rats in the Walls"—if it's anywhere near as good as Mark Lenard's reading at UCLA last spring, get it. (I hope to find out soon.)

Well, *caveat emptor*, and all that.

—Something Completely Different
Congratulations to Jim and Lee, and *Camber of Culdi* will be published next summer.

—Gavin Claypool

THE PARTY'S OVER.



All too often, when the party ends, the trouble begins.

People who shouldn't be doing anything more active than going to sleep are driving a car. Speeding and weaving their way to death.

Before any of your friends drive home from your party, make sure they aren't drunk.

Don't be fooled because they drank only beer or wine. Beer and wine can be just as intoxicating as mixed drinks.

And don't kid yourself because they may have had some black coffee. Black coffee can't sober them up well enough to drive.

FRIENDS DON'T LET FRIENDS DRIVE DRUNK.

If someone gets too drunk to drive, drive him yourself. Or call a cab. Or offer to let him sleep over.

Maybe your friend won't be feeling so good on the morning after, but you're going to feel terrific.

DRUNK DRIVER, DEPT. Y BOX 2345 ROCKVILLE, MARYLAND 20852

I want to keep my friends alive for the next party. Tell me what else I can do.

My name is _____
Address _____
City _____ State _____ Zip _____

B-1



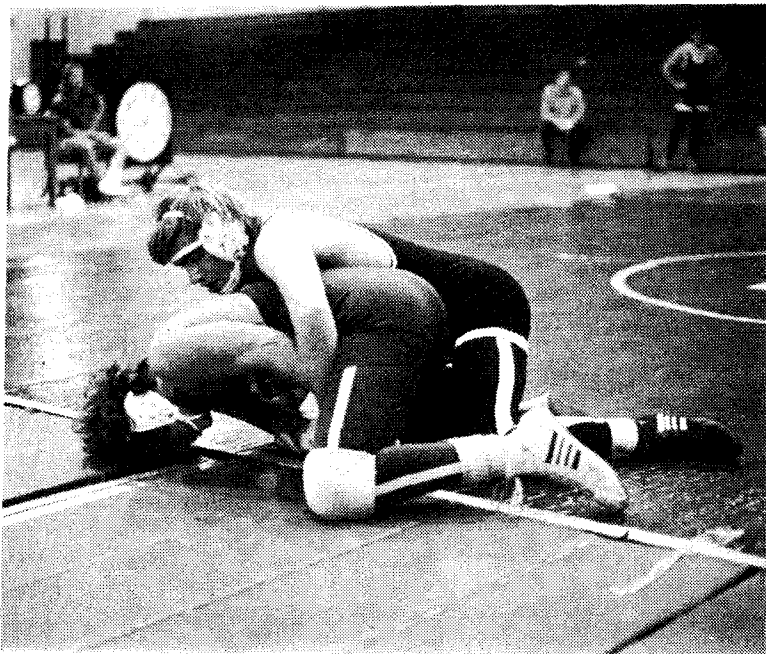
TQFR

by David Callaway

Some of the results of that inverted final exam—the Teaching Quality Feedback Report—should be reaching you by the time you return from Christmas vacation. If you remember filling out the forms last year, you may already know what this is.

The TQFR is the only standardized method of evaluating the teaching abilities and methods of professors. This "feedback" provides an honest method of rating professors. According to Jon Teich, who, with the Educational Policies Committee manages to produce the thing, about 30% to 40% of the students in each class return the questionnaires. (The TQFR is, incidentally, financed by student relations, spelled Lyman Bonner)

The basic format of the TQFR is to have both the professor's and student's opinions and evaluation of the course listed. The idea is to find out the professor's objectives in teaching the course, how he grades, etc. and compare them with student evaluations. All this is presented in a brief, numbered format. The professors are also rated, on a 0-10 scale as to enthusiasm, clarity, interest, pace and an "overall" rating. Interestingly enough, the overall rating is 0.3 higher than last year—could there be a general trend of classes getting better? Next year's TQFR may tell.



Caltech wrestler Tom Snyder gains the advantage during the meet with P.C.C. last Friday afternoon. Photo by B. Lockett

Shades of Eliza Doolittle

Chorus Line Craft for J. Random Troll

Modern Dance was showcased recently in Ramo Auditorium in a lecture-demonstration sponsored by the Caltech P.E. department. The lecture was designed by Karen Goodman, Caltech's own Modern Dance instructor, as an opportunity to talk generally about dance, discuss what goes on in the dance classes here and to let people know that dance is available here at Caltech.

The first half of the lecture was devoted to what goes on in the modern dance classes that meet every Tuesday and Thursday in Dabney Lounge. Ms Goodman explained what the goals of the classes were and how the various exercises are used to accomplish these goals. The exercises were demonstrated by two very capable dancers in their own right, Susan Heldfond and Doris Tsongas Finch (who is also on the Biology staff at Tech).

Ms Goodman, who didn't take up dancing until her senior year of college, feels that everybody, whether they have danced or not, can appreciate dance. "I may or may not have a specific idea to put across when I dance, but the most important thing is that the audience is affected by the motion on stage." At the close of the lecture, three dances, all choreographed by Ms Goodman, were performed. These dances amply demonstrated that if we just rely on our basic intuitions regarding motion we will understand dance. The understanding was wonderful.

Ms Heldfond and Ms Finch performed "A Clean Well-Lighted Place." The dance has no accompanying music but the control and the fluid movements of the

two dancers were all the music that was necessary. Ms Goodman, who is an extremely accomplished dancer and has performed with several dance companies throughout California, took to the stage for two numbers. The first was a section from "The Creation of the World" by Milhaud. Though choreographed for a male dancer, "imagine me several inches taller and much heavier," the enthusiasm of the dancer made the above qualification completely unneeded. She filled the stage with the narcissistic movements of a man very much into his own body. Putting many everyday gestures, such as lifting weights and flexing muscles, into the framework of dance provided a very palatable and exciting performance. The final dance, also danced by Ms Goodman, is based on her romanticized version of a nerve synapse. The music by Karl-Birger Blomdahl is shaped by Ms Goodman's incomparable dancing into a veritable dynamo of energy. Before our eyes Ms Goodman transformed herself into a single nerve impulse, a spot of energy, that exists free, in between nerve endings, but a moment and then is gone. But what a moment! Ms Goodman's gleaming white form was like a painless electrified jolt to the spine that made the whole audience take notice when she danced.

Too short the hour seemed, for the dazzling display of ability and dancing technique held the entire audience entranced. Our thanks go to Ms Goodman and comrades-in-dance for giving us a moment too seldom repeated at Caltech.

—Alan Shusterman

State School

Continued from Page Six

course, qualified or not. Of course, the TAs are supposed to be generally qualified—the TAships are not given on basis of need, as the department doesn't believe in the concept 'need', so past performance has to be a major factor in choosing TAs—but it's sometimes a long step from 'generally' to specifically qualified.

Or, I Was A Teen-Age . . .

This quarter my 60 hours of reading (I asked for a half-TAship and they gave me a full one; tricky, that 'need' business) happen to be spread out over four courses, none of which is the course I teach. Two of those courses are in areas where I have passed a comprehensive written PhD exam, which is as much of a certification of competence as there is to offer, and a third course (mathematical economics) more or less follows from my background, but the fourth course is a different matter. It happens to be History of Economic Thought, a subject in which I have some interest, and have taken one (1) course. Last spring I took the same course, and got a B; this constitutes my qualifications in the area. Actually, that's not as bad as it sounds, as the B was one of the better grades among the grad students taking the course (which is required). The only problem is that this quarter a different professor is teaching the course, and the two reading lists only overlapped by one book. I hadn't, and haven't, read any of the others.

It might strike you that it is very difficult to do a decent job of grading essay questions on material you don't happen to know anything about. It certainly struck me that way. Even with the rather detailed answer key which the professor kindly allowed me to extort from him, it was not a pleasantly memorable occasion, made no easier by there being exactly 101 exams in the class to read. (Feel sorrier for the Ec 1 and Ec 2 graders—they have some 500 exams each quarter.) Whenever some poor student said something that wasn't on the key, and a great many did, I really didn't know if it was right or wrong. Of course

I could, and perforce did, assume from past experience that the bulk of them didn't know what the hell they were talking about, but all the same, the system isn't notable for its equity. (The department doesn't really believe in equity very much either. It shows.) If you're going to suggest it would be better if I had done all the assigned reading, you're right, it would be better—for them, not necessarily for me. (I said I was guilty too.)

Flunker-Outer for FSU

It's a funny thing, but I'd never really thought much about the grading I'd undergone at Caltech, more or less assuming that it was either just, or at any rate unalterable. (Since it was just about entirely done by professors, it probably was at least as just as could be expected.) After arriving at FSU, I quickly determined empirically that the grading was quite random, but I still figured that it was unchangeable. Now I'm a grader myself, and I've lost the latter illusion too. (Actually, that's perhaps a minority view—some other graders don't ever entertain complaints about their grading, and I'm told that FSU has a rule that grades can't be changed later, although this rule is generally ignored.) I presume that the students, if they really knew what was going on, would revolt. Or maybe they wouldn't, on second thought; after all, it's the Seventies now, not the Sixties.

So rest assured, dear Techer, that had you gone to FSU, you probably wouldn't have gotten that 4.0 after all, because somewhere along the line, you would have had some cretin like me grading your wonderful exams and giving you a B. (No pluses or minuses at FSU.) After all, even such brilliance as yours might not have a chance to shine through in a system where the reader is allowed 25–30 minutes per student per quarter to read all the many hours of outpourings of your midterms, finals, and problem sets. (Term papers? Never heard of them.)

Of course, the system gets part of the blame. At FSU one of the professors in the department even boasts to his classes that he doesn't get paid for teaching well, so he doesn't plan to teach at all. And he doesn't. (FSU's department is very free-market oriented, and takes the hedonic calculus seriously. If you

around then. For \$1.50 we'll drive you to the Music Center that evening to hear James Levine conducting Paul Schenly on piano, doing Webern: Six Pieces for Orchestra, Op. 6; Beethoven: Piano Concerto No. 2; and Sibelius: Symphony No. 2. We'll also bring you back to campus, free of charge, after the show . . .

Three nights of Decompression Chamber this term, not two! That's right, we're going to hold it Monday night also, on a trial basis. That's Saturday, Sunday, and Monday, 8:30 p.m.—1:30 a.m. each night, in Winnett Lounge. See the article elsewhere for details.

Good luck on your finals—and have a blast over vacation!

—Alan Silverstein

are a student, this can be hazardous to your mental health.) Of course, publishing is the real game, although ironically teaching effectiveness is probably more important officially than it is at Caltech, and the profs take publishing seriously: among them all they have probably published more books and articles than, say, Harry Gray. As priorities go, students rank somewhere near the bottom, generally speaking.

On the other hand, with the best intentions in the world, you aren't going to get quality teaching or grading at a school with 20 times as many students as Caltech. Take my word for it. I always knew there were good reasons why I chose to go to Tech instead of FSU for my undergraduate training, and now I can tell you exactly why. Even without going into other details, some of which I have covered in articles in the last two years (aha! Now I've given it away, for those of you not aware which school I'm talking about, haven't I), you have my word for it, Techers, that there is very little cause to regret the decision you made not to go to FSU. Caltech is a far, far better place to be—take advantage of it!



Become
A Fed

The Placement Service has received copies of "Summer Jobs—Opportunities in the Federal Government," which describes available Civil Service summer jobs. The Civil Service test is required for all jobs. The deadline for filing to take this exam is January 16, 1976. Anyone interested in the program is advised to pick up a booklet in Room 8 Dabney Hall as soon as possible.

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CALTECH



This will be brief. The signup sheet was posted this morning for the Philharmonic Concert next Thursday—room exists for eight people. This is a good way to get away from campus for awhile, those of you who will be