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THE CALIFORNIA TECH

BUT VOTE,
DAMMIT!

Volume XC, Number 7

Pasadena, California

November 4, 1988



Photo by Marc Turner

Millikan Pumpkin Flashes Audience

by Brian Lemoff

"It certainly surprised the hell out of me; I didn't expect it to flash"
—Bill Flick

For the first time in four years, the annual "Millikan Pumpkin Drop Experiment" succeeded in producing the elusive "blue flash" — at least that is what the experiment's perpetrators are claiming. The experiment, performed as is traditional at midnight on Halloween, consists of dropping one or more pumpkins, frozen in liquid nitrogen, nine stories from the roof of Millikan Library. On impact, the pumpkin is, in some experiments, observed to emit a blue flash, the result of a quantum-mechanical effect known as *triboluminescence*. To lend credibility to its results, the experiment is typically witnessed by several hundred curious onlookers. While some skeptics claim that it was nothing more than a camera flash, most witnesses believe that this year's pumpkin drop was a success. The flash was observed on the impact of the first pumpkin to be dropped. Two smaller pumpkins were later dropped, but no luminescent effect was observed.

William J. Flick, Dabney House Vice President, was primarily responsible for this year's drop. Flick says that from his vantage point on the roof of Millikan, the flash was unmistakably the result of triboluminescence. To Flick and others on the roof, the flash appeared as an extremely bright spot of light, centered precisely on the pumpkin, and approximately five feet in diameter. According to Flick, this makes it inconceivable that the effect was merely due to a camera flash.

The pumpkins, one about eighteen inches in diameter and the others about ten inches in diameter, were purchased by Flick on Saturday morning in Glendale. The pumpkins were placed in an insulated trash can which was then packed with dry ice and covered. After about nine hours, the pumpkins were removed. Flick then hammered a hole in each of the pumpkins, and returned them to the trash can. This time, however, the trash can was filled with liquid nitrogen. The holes in the pumpkins allowed the nitrogen to freeze the pumpkins' interior. Every eight hours, Flick refilled the trash can with liquid nitrogen. This continued for a full forty-eight hours, until the trash can and the pumpkins were ready to be moved.

At about 11:00pm Monday night, the trash can was loaded into a shopping cart and taken to Millikan Library. The load was taken to the ninth floor by elevator and then carried up one flight of stairs to the roof. Ropes were used to hoist the trash can the final ten feet to the parapet from which the pumpkins were dropped.

According to Flick, the reason why only one of the pumpkins flashed may be the positions of the pumpkins during the freezing process. The two small pumpkins were on top of the large pumpkin in the garbage can. Thus, as the liquid nitrogen evaporated, the smaller pumpkins were became exposed to the air while the larger pumpkin remained submerged. Flick estimates that the large pumpkin, which apparently flashed, was cooled to about seventy degrees Kelvin, while the small pumpkins may have been closer to one hundred degrees Kelvin.

Crime Rampant on Campuses

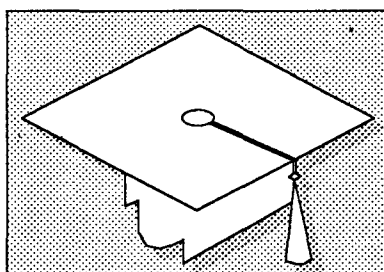
By Pat Ordozensky

Gannett News Service

A Cornell freshman is killed in her dorm room by her roommate's former boyfriend.

A University of New Mexico sophomore is stabbed to death walking home after an argument at her boyfriend's fraternity house.

At the University of Pennsylvania, an alumni relations official is beaten, kicked and robbed in front of her daughter while out looking for her dog on Christmas Day. Two days later, Penn president Sheldon Hackney's home is looted in broad daylight.



Crime on campus Part 1 of 4

At least 33 students were killed at colleges in the United States since January 1987. More than 900 — some say it could be 10 times that number — were raped. Almost 3,000 were robbed by armed criminals. More than 19,000 were physically assaulted. More than 250,000 had something stolen.

Those are among the numbers, never before available even to the FBI, compiled by a USA TODAY-Gannett News Service task force in an eight-month investigation of crime and safety on college campuses. The survey covered 4,000 students, more than 600 law enforcement officials and dozens of administrators and other school officials.

It found:

— One of four students has been a crime victim at college. That's the same rate as for the whole U.S. population.

— At the 550 largest campuses, 251,842 crimes were reported in 1987, a 10.2 percent increase in one year. Among them were 12 murders, 340 rapes, 6,289 assaults, 860 armed robberies and 10,243 bicycle thefts. All totals are higher than in 1986.

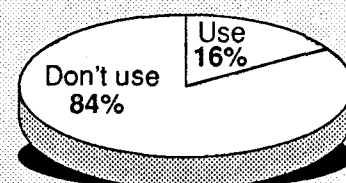
— One-fourth of all students, and 43 percent of the women, said they didn't feel safe walking on campus alone at night.

"I felt safer in Tokyo, the second-largest city in the world,

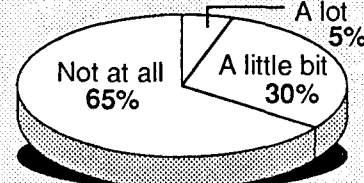
Careless about crime

College students often increase their chances of becoming crime victims through their attitudes and actions, a Gannett News Service-USA TODAY survey of 2,470 college students at 50 campuses nationwide shows.

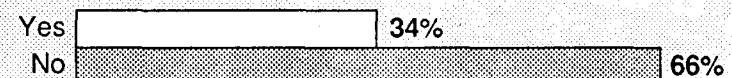
Women using night escort services



Students considering safety in picking a college



Percentage of students who leave dormitory doors unlocked or propped open



Julie Stacey, Gannett News Service

than walking to my apartment from the bus stop," said Molly Ward, editor of the University of Oklahoma student newspaper.

— Almost 30 percent of today's students say their campus is not as safe as they expected it to be.

And that, some cops and criminologists say, is a big reason campus crime has become a hot issue of 1988: the difference between the reality of college life and the perception that campuses are pastoral havens of peace and safety.

"Serious crime is rampant on America's college campuses," said Michael Smith, a criminal justice professor at the University of Southern Mississippi. "Campuses are supposed to be... an idealistic sanctuary where crime doesn't occur. That's not a valid assumption today."

The USA TODAY-GNS task force visited 50 campuses to survey 2,500 students, selected randomly so that every student in the country had an equal chance of participating. The schools ranged from UCLA and Boston University, in the center of large cities, to Buena Vista College surrounded by Iowa corn fields.

At the same time, the task force conducted a mail survey of college law enforcement officials in which 639 schools reported crime statistics for the last two years.

The results:

— A violent campus crime — rape, robbery, assault, etc. — occurs to 1 of every 494 students. The ratio varies little between schools in cities, suburbs and small towns.

— 11 percent of the nation's students have been confronted by an assailant on campus. For 3 percent, it's happened more than once.

— 27 percent of the women students said they've been forced to have sex. Only 5 percent said the rape was by a stranger. Another 5 percent said the undesired sex was with more than one partner — police call it "gang rape."

— Total campus crimes reported to police last year were up 15 percent from 1986. Rapes were up 140 percent; assaults, 170 percent; robberies, 189 percent.

And campus cops across the country are trying to spread the

word that society's criminals aren't deterred by campus boundaries. That's why many willingly reported their crime statistics to the USA TODAY-GNS task force.

"How is a student going to avoid the rapist if she doesn't know the rapist is out there?" said Asa Boynton, public safety director at the University of Georgia and immediate past president of the International Association of Campus Law Enforcement Administrators. "Our greatest obstacle is to get people to take crime seriously," said Lt. Jon Broulette at the University of Washington. "That's harder for younger people because they haven't been burned yet. You learn by experience."

At Virginia's College of William and Mary, Police Director Richard Cumbee said the greatest hindrance to crime prevention was "the students' feeling of immortality."

But students can be criminals, too. At 45 schools — mostly rural spots like Oregon Tech, Bucknell, South Dakota State — police said more than 95 percent of their crimes were committed by students.

San Diego State's Carpenter said most of his school's rapes occur at fraternity parties where alcohol is consumed, citing the two problems mentioned most often by students and cops alike.

Rape victims tell often-similar tales of drinking at a fraternity party and winding up — unwillingly — in bed with a male acquaintance.

"If you go down to a fraternity basement, you're pretty much asking for it," Dartmouth student Larissa Roesch said.

"The extent of the drinking contributes to a lot of the problems," she said. "The macho image is to be able to drink a lot and then go out and get laid."

Almost two-thirds of students physically assaulted on campus say the attack came after a party at which alcohol was consumed. For 31 percent, the assault was sexual.

In sheer numbers, however, the largest problem is simple theft: a wallet stolen from an empty dorm room; unattended clothes taken from a laundry room; an unlocked bicycle gone from its space.

Police said 269,151 items were stolen at colleges last year, up 11 percent from 1986. They reported 12,110 thefts from dorms, 15,596 from cars, 10,045 pilfered bicycles.

Colleges awash in crime

Thirty-three students have been killed at U.S. colleges since January 1987. Almost 3,000 were robbed by armed criminals. More than 19,000 were physically assaulted. More than 250,000 had something stolen. Those figures — never before available even to the FBI — come from an eight-month investigation involving 4,000 students and more than 600 law enforcement officials. Results:

- ▶ One in four students has been a crime victim, the same rate as for the general population.
- ▶ At 550 campuses, 251,842 crimes were reported in 1987, a 10.2 percent increase in one year.
- ▶ One-fourth of all students — including 43 percent of the women — said they didn't feel safe walking on campus alone at night.
- ▶ A violent campus crime — rape, robbery, assault, etc. — occurs to 1 of every 494 students.
- ▶ Reported crimes last year were up 15 percent from 1986. Rapes were up 140 percent; assaults, 170 percent; robberies, 189 percent.
- ▶ Eleven percent of students have been confronted by an assailant on campus. For 3 percent, it's happened more than once.
- ▶ Twenty-seven percent of women students said they'd been forced to have sex.
- ▶ Almost 30 percent said their campus was not as safe as they expected it to be.

Source: Gannett News Service, USA TODAY research

Gannett News Service

continued on page 7

opinion

Tom was supposed to write an editorial, it being his turn, on the cutbacks in student counseling here at Tech. I don't want to steal his thunder, as he will, I'm sure, write the editorial eventually -- I'll merely point out to the administration that, despite rampant student depression and numerous suicide attempts, there has not been a successful student suicide at Tech for years; this is due, for the most part, to the efforts of the counseling services.

That, however, is not the subject of this editorial.

I am somewhat in the middle of a controversy that I'm sure will only be fueled by this issue of the *Tech*. That controversy involves editorial policy, especially Inside World editorial policy, which has seemed to vary from issue to issue, and even within issues. A clarification is in order, which hopefully will make sense out of some of our previous statements concerning our policies.

I say that I am in the middle because I was once an Inside World writer and understand, to a sub-

stantially larger degree than my fellow editors, Paul and Tom, the popularity of that weekly gossip column. I was even known to take exception to the editorial policies of certain previous editors. Yet, as an editor, I now have to contend with my own, and my fellow editors', standards of journalism, which are occasionally inconsistent with my ideals of freedom of writers.

We (I am now speaking for the three of us) find censorship abhorrent in the extreme. It is ridiculous to infer from this that we will print everything we receive, or that what we print will be uncut or unedited. A non-censorship policy means to us that we feel it is inappropriate to remove items from publication on the basis of "naughty" words, ideas which some may find offensive, acronyms subtly slandering humorously our laudable editorial staff, or attempts at humor which the editors do not find funny.

We will alter or remove from publication items which are criminally libelous or are grossly and unfairly insulting to us or to others;

this is for the most part applicable to the Inside World. We feel absolutely free to alter or redirect insulting prose; a writer who writes satirical hearsay about others that he would not want to see written about himself has only himself to blame for the consequences.

The editor's primary job regarding the content of the paper is to tailor submissions to the sensibilities of the readership. Techers are (these are the generalizations we make, based on those we know and have spoken to, as well as our total of sixteen years as Techers) not offended by obscenity or radical ideas, and they absolutely adore pointless, space-filling, self-referential articles. But they are offended by gratuitous slander.

Even if all of you aren't, we are. And since you elected us, you have to put up with our notions of propriety.

If you have different points of view about what should and should not make it past our blue pencils, write letters to the Tech.

-al

Caltech Biologists Develop Genetic Assay

[CNB]—Researchers at Caltech have developed a relatively simple method that can be used for the rapid detection of genetic disease. The technique, called the oligonucleotide ligation assay (OLA), was developed by Ulf Landegren, research fellow in biology; Rober Kaiser, senior research fellow in biology; Jane Sanders, member of the professional staff; and Leroy Hood, the Ethel Wilson Bowles and Robert Bowles Professor of Biology, and chairman of the Division of Biology.

Landegren presented the results of the team's research on Tuesday at a conference in San Diego, and a technical report describing the research appeared in the August 26, 1988 issue of *Science*, pages 1077-1080.

The OLA technique is applicable to diseases that result from even minute defects in certain genes such as single nucleotide substitutions. People afflicted with sickle-cell anemia, for example, inherit from each of their parents a copy of a defective gene that causes their bodies to produce flawed versions of hemoglobin, the blood protein that carries oxygen to the body's tissues. The defect in sickle-cell anemia has been traced to the substitution of a single one of the hundreds of nucleotides that make up the hemoglobin gene.

Only those who inherit copies of the defective gene from both parents have full-blown sickle-cell anemia. Those who get only a single copy of the gene are carriers of the disease—they can pass it on to their children—and there are indications that such individuals are subject to increased risk of sudden death during exertion.

Until now, it has been relatively difficult and cumbersome to detect the single-nucleotide substitution in sickle-cell carriers and others with similar defects in other genes. One common technique, for example, relies on the abilities of so-called "restriction enzymes" to cleave DNA only at certain specific sequences of nucleotides. The resulting fragments are then separated by gel electrophoresis. The single-nucleotide substitutions of defective genes often result in a different pattern of DNA fragments than the normal genes after both have

been treated with the appropriate restriction enzyme. This technique, however, is estimated to catch less than half of all single-nucleotide substitutions, and it may take five to six days to get an answer.

The OLA technique, in contrast, currently provides an answer in 24 hours or less, and automation may reduce that time to as little as three hours. For the OLA technique to work, the researchers must have previously identified the exact nucleotide sequence of the normal and the mutant gene. Prior to the analysis, they produce two types of oligonucleotides—small synthetic DNA sequences that match sections of the normal gene. One of the synthesized oligonucleotides will have a sequence that matches a section of the gene up to and including the site of the potential defect, and the other oligonucleotide will have a sequence that matches a section of the gene beginning with the next nucleotide in line. One of these oligonucleotides will be tagged with a radioactive or fluorescent label, and the other will be attached to a compound that, in turn, can easily be bound to a solid support.

The assay is performed by separating the two strands of the DNA double helix from the patient's DNA sample. The single-stranded DNA is then mixed with both oligonucleotides that then anneal to their complementary nucleotide sequences. This is referred to as "hybridization." The next, and most critical, step is the addition of an enzyme, called a ligase, that joins the two adjacent oligonucleotides, but only if they are exactly complementary to the DNA sequence to which they have annealed. The ligase does not work if there is a mismatch, as there will be whenever there is a single-nucleotide substitution at the critical site. The next step is to remove the gene's DNA and to bind the resulting oligonucleotide to a solid support. As the illustration shows, only the oligonucleotides that have been properly joined will contain the radioactive or fluorescent label, which can easily be detected.

"We've demonstrated that the OLA technique works well with sickle-cell anemia, but this is only one of many genetic diseases whose diagnosis may be speeded

up," notes Landegren. "Others include phenylketonuria and beta thalassemia, which are devastating diseases of early childhood. A rapid technique for diagnosing carriers of these diseases would be very useful in genetic counseling. In addition, great strides are currently being made in identifying gene defects that predispose people to diseases such as emphysema and coronary artery disease. People who knew that they carried such a gene could avoid the environmental risk factors that actually precipitate the disease. For example, if a person learned early in life that he or she carried a predisposition toward emphysema, he or she would have a great incentive not to start smoking. Furthermore, we believe we'll be able to extend the application of this technique to the analysis of altered genes involved in cancer, to the detection of infectious organisms such as the AIDS virus, and to the identification of individuals for forensic purposes."

"We believe that the OLA technique may one day become an everyday diagnostic procedure," says Hood. "We're currently working on a machine that will automate the technique. This machine will, conceivably, have the ability to analyze hundreds of samples each day."

Support for this research comes from the Knut and Alice Wallenberg Foundation, the National Science Foundation, the Defense Advanced Research Projects Agency, the Upjohn Company, and Applied Biosystems, Inc.

letters

To the Editors:

Last Friday night I heard rumors of some happy Techers driving a Daihatsu around campus at high speed, their experience apparently culminating with a small accident on the Olive Walk. In the past year there have been a number of incidents which, like this one, involve Caltech work vehicles and have ended in some unforeseen crescendo.

Previously the Board of Control has not taken severe action in these cases, believing them to be isolated incidents of froshly frolicking. However, we students are soon going to find ourselves in very deep yogurt if these events continue. As things stand now, the ASCIT van is insured through Caltech. In the past students have had insurance privileges revoked due to Daihatsu incidents which prompted the administration to stop looking the other way. A notice informed us that students could no longer check out Caltech vehicles, a luxury which had been appreciated greatly, especially by those without transportation.

Hearsay leads the ASCIT Board of Directors to believe that presently our ASCIT van privileges may be in jeopardy, though this is not certain. Misuse of Caltech vehicles, even Daihatsus, will only make matters more difficult for everyone.

As both ASCIT Vice President and Board of Control Chairman, I would like to let you know that playing around with the motorized Caltech carts will no longer be taken lightly. Such actions could well have detrimental effects that we may be powerless to nullify.

I have nothing against having a good time; it may be the only thing that keeps us sane at Caltech. But having a good time and thinking

about the consequences of your actions aren't mutually exclusive.

Respectfully yours,
Gabriela Cornejo
ASCIT V.P.

To the Editors:

An old theme is recurring, but this time I'd like to see if something concrete can be done about it.

On more than one occasion I've heard people comment on problems with grading in classes that are attended by both graduates and undergraduates. One solution that has been proposed is to have the graduates and the undergraduates graded on separate curves.

Since I am interested in working on some of these concerns, I would like to get feedback on how people feel about this proposal. Please fill out the brief surveys which will be in house lounges on Friday 4 November (today), and mail them to me at 1-59. If you have any questions or comments, see me in Ricketts House.

Respectfully yours,
Gabriela Cornejo

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entertainment

Movie Review:

U2 'Rattle and Hum' Raw Success

by Andrew Hsu

"This is a song Charles Manson stole from the Beatles, we're stealing it back..."

The concert stage lights go on and so begins the first motion picture about U2. Opening in movie theaters around the country tonight, the film will carry the heavy responsibility of bringing the spirit, ideals, and music of this immensely popular band to an audience even larger than all the people that have ever attended a U2 concert live. The movie does quite a good job in this aspect, although, it seems as if the movie does too good of a job at times.

Rattle and Hum is U2's attempt to preserve the happenings of their Joshua Tree tour on film and to also give people a glimpse of their rather introspective personalities. Although old fans of the band are quite familiar with the highly introspective and personal nature of the band and its members, the wide exposure that the quartet has recently received as a result of publicity and stadium touring have made the them into larger-than-life characters.

Unlike U2's previous venture into the video/movie market, *U2 at Red Rocks*, where the band attempted to make themselves larger than life by videotaping a concert from the War tour, the new movie intersperses concert footage with short interviews with band members and other sequences that show the band members while off-stage.

Although the interview sequences were kept at a minimum, they did reveal the warm and often humorous personalities of the band members. The band members make the interviews quite a comical and entertaining experience which rivals the interview sequences in the movie *This is Spinal Tap*. In spite of all the talk about U2's music being too serious and intense, the interview sequences show that the men behind the music are still quite ordinary people that love to have a good time.

While some of the footage was shot in their native Dublin, Ireland, most of the film shows the band members in various places in America. When not performing, the movie gives the audience the impression that U2 spent a great deal of time in search of the roots of American blues and rock. In fact, the band actually traveled to the original Sun studios in Memphis to record 5 songs in their new album. This recording session was also documented in the film.

Not surprisingly, the movie spends a great deal of time showing footage from the various concerts that the band performed while on their previous tour. For all the people that missed out on the live concert or had seats so far away that they couldn't see the band, the film gives the movie audience an up-close view of the band on stage.

The black and white filming gives the movie a rather rough-edged, and raw feeling, although some of the excitement of attending a live concert is lost when the movie spends so much time showing the individual band members up-close on stage. The band is just not as visually exciting when they are filmed up-close during a concert. Much of this can be attributed to the fact that the band must assume a larger-than-life image to perform in front of a large audience and this stage image does not work as well when being filmed up close.

But fortunately, the music during these concert clips make up for a lot of the inadequacies of the filming. Although their two previous albums have a very polished quality to them, the live rendition of material from these albums, as well as their performances of their newer material, is quite driven and intense. The energy created during these live performances is superbly captured on the sound track. With the movie theater's P.A. system adjusted to the proper volume, *Rattle and Hum* certainly rivals any U2 concert acoustically. The music that the band performs during the movie is enough reason to forget any of the visual shortcomings of the film.

If you like to watch documentaries on rock bands or if you enjoy listening to U2, this movie must be seen in a movie theater. The movie will probably lose a lot of its appeal when it gets played on a VCR. Even with increasing prices of movie tickets, the cost of watching *Rattle and Hum* at a movie theater is still about a fifth of seeing U2 live. What's more some theaters will even be selling souvenir t-shirts and posters. But if you can overlook all the silly commercialism, *Rattle and Hum* gives a rather insightful glimpse into the attitudes and workings of one of the most influential bands of this decade.

Any discussion of the movie *Rattle and Hum* would not be complete without mentioning U2's new album, also under the same title. The album consists of the songs that were included in the movie minus almost all of the songs that appeared on their previous albums and plus a few songs that were not in the movie.

The album is definitely a departure from the trend of the last two albums which was to create sonic textures and landscapes with the help of various studio effects, keyboards, and Brian Eno. The new songs that appear on this album are much more soulful and driving. The songs are much simpler and the studio effects are kept to a minimum, making most of the new material rather suitable for live performances.

Another departure that the album has from any previous album is the overwhelming influence of American blues in most of the songs. The great blues guitarist B. B. King even helps out on one of the tracks. Another track features the Memphis Horns adding a bit of soul to U2's tribute to Billie Holiday. The band even traveled to the Sun studios in Memphis to record some of the tracks with veteran sound engineers Cowboy Jack Clement and Dave Ferguson to get more of a blues sound that the early rock and roll artists had on their albums.

Only one track is reminiscent of their collaboration with Brian Eno. This song, "Heartland" also features Eno on keyboards and proves to be one of the most haunting songs of this album.

The religious overtones that are present in all U2 albums is once again present in *Rattle and Hum*. While the previous albums looked at religion in a very introspective manner, *Rattle and Hum* looks at the more joyful side of religion, with a heavy gospel influence in many songs. "I Still Haven't Found what I'm Looking for" resurfaces on this album as a "gospel" song recorded with the help of a church gospel choir.

Despite all the commercial success that the album will probably have, the new U2 album captures much of the energy that was present in their live performances but lacking in their studio albums. The live recordings are superior to those on *Under a Blood Red Sky* and *Wide Awake in America*, and the studio recordings have a biting quality that has been missing ever since their first album.

The album is quite different from any of their previous albums (including *The Joshua Tree*, where some of the songs on this album originated) and it certainly proves that while U2 has achieved large commercial success, they certainly have not stagnated artistically to satisfy the tastes of their newer audiences.



Rattle and Hum opens in theaters across the nation tonight.

Photo by Anton Corbijn (Paramount Pictures)



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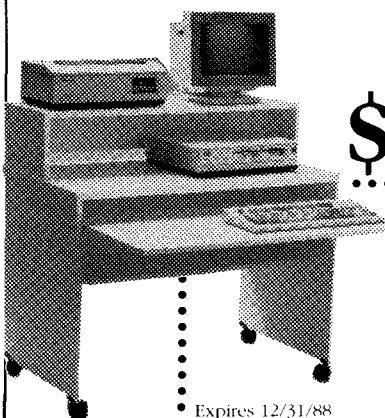
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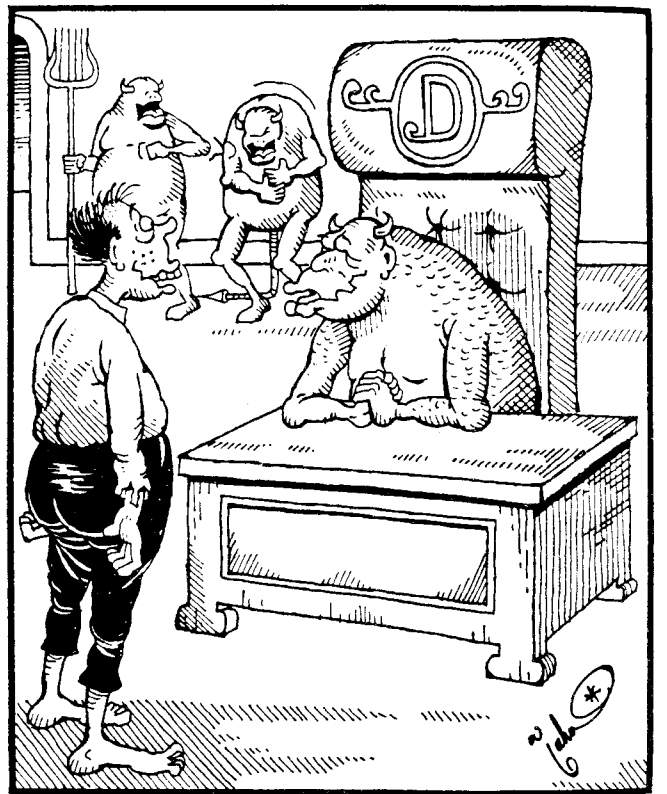
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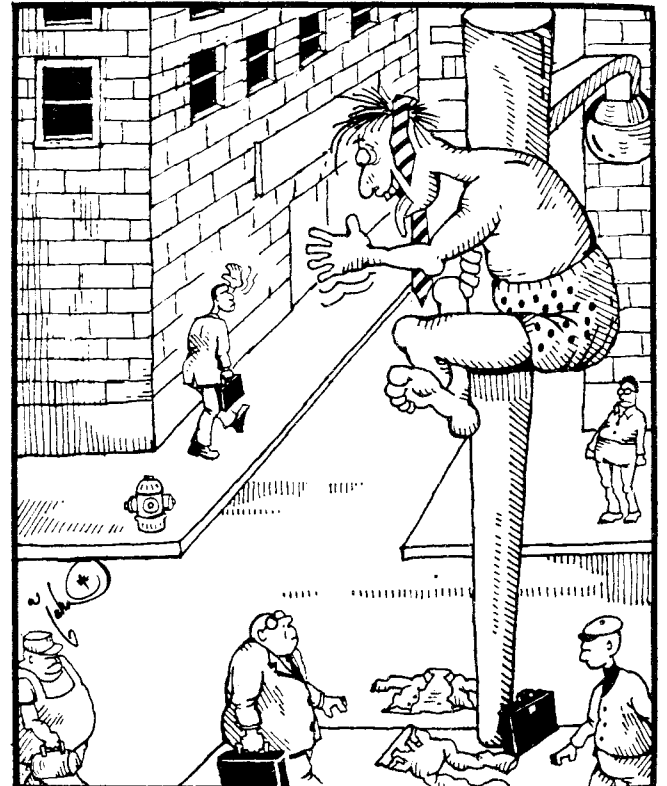
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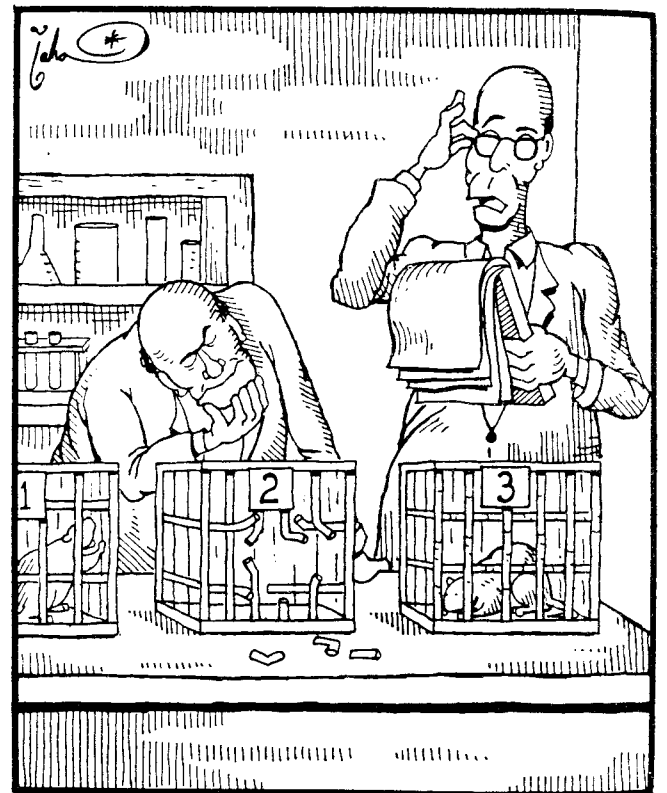
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Why sure, you get time off for good behavior. Let's see... you're sentenced for eternity, right? Tell you what, we'll knock off six months.



After years of constantly fighting, Ted and his sanity decide to finally part company.

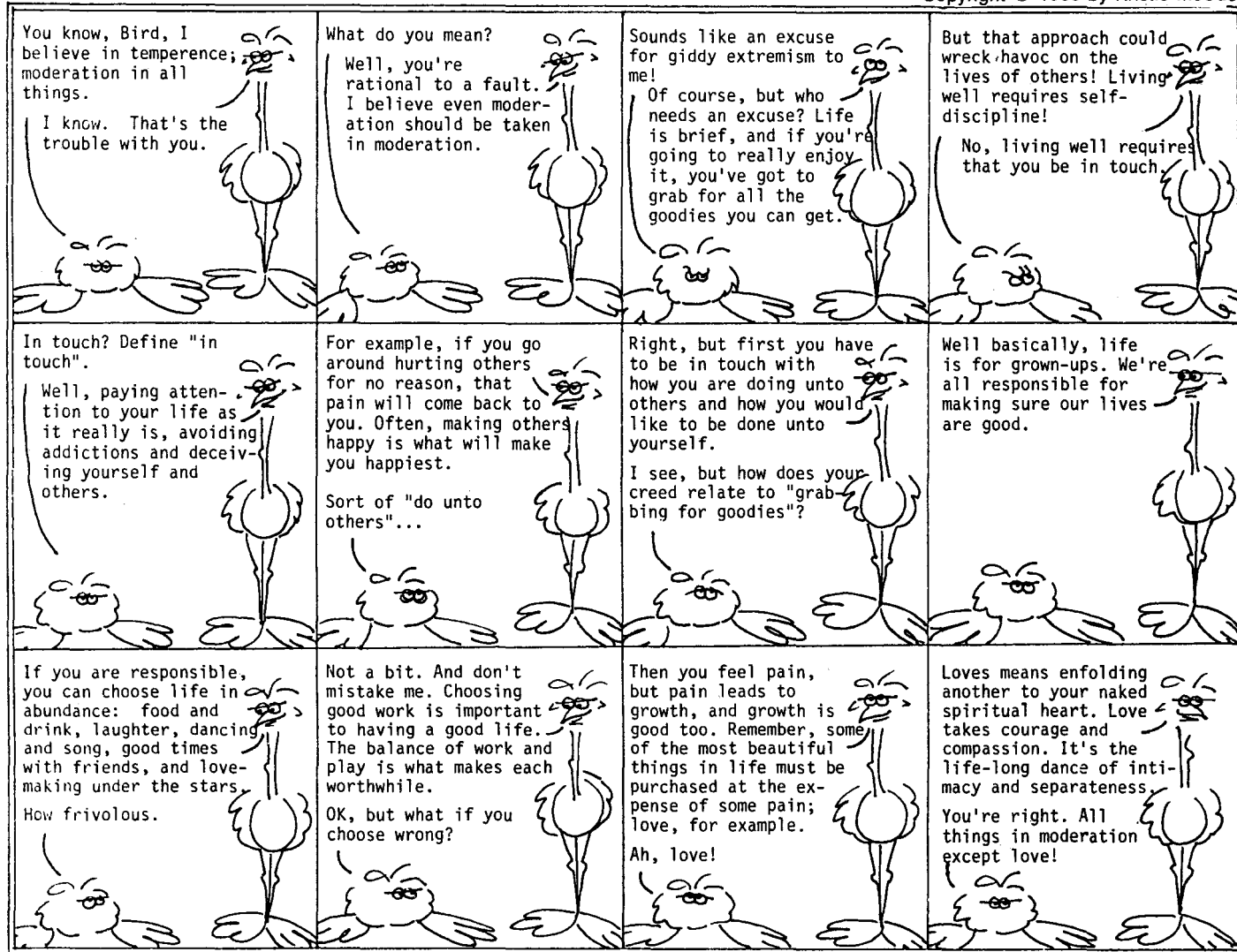


Rat #2, let's see... this is the one that got the placebo.

The Adventures of TROY

Kristie McCue
Copyright © 1988 by Kristie McCue

Rotary Club Gives \$\$\$



Rotary Foundation Scholarship applications for 1990-91 are now available, according to Dr. Alton Scott, Scholarships Chairman for the Rotary Club of Arcadia. Completed applications are due by 1 February 1989.

Rotary Scholarships are offered in several categories to cover the expenses of tuition, books, fees, board and room, and travel to an overseas educational institution. Estimated value of the scholarships is \$15,000.

Categories include graduate study for those with a baccalaureate degree, undergraduate study for those with at least two years of college study but with less than a baccalaureate degree, vocational study for those with a secondary education and at least two years work in a vocation, and journalism study for those with at least two years experience in print or broadcast journalism.

While the purpose of the scholarships is to further international understanding and peace, the successful applicants are expected to gain from the experience.

Two new scholarships added last year include the worldwide International Peace Scholarship for six applicants to study at the University of Bradford School of Peace Studies, West Yorkshire, England, and a 21-month Japan Program for 20 students. Applicants must qualify in one of the five standard categories and then compete for these two special programs.

continued on page 2

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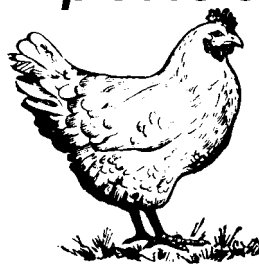
The twelfth occasional Pasadena Doo Dah Parade has been scheduled for Sunday, November 27, 1988 from noon to 2:00 pm. Rain or shine! We have entry forms, mail order forms for T-shirts, caps and pins. If you're interested in participating in the parade or would like more information, come to room 64 in the Student Activities Center.

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The Inside World

This week's Compleat Inside World was brought to you by:

- Blacker: Marty O'Brien
- Dabney: David A. Edwards and two editors
- Fleming: Chris Habecker, by order of His Imperial Majesty Jim Burleigh
- Lloyd: Steve Carson and Doug Peterson
- Page: Gary Eastvedt and Mark Schmidt
- Ricketts: Charles Cook, Joe Dadek, Paul San Clemente, and Julius Yang
- Ruddock: Nik Joshi and David Proctor

[Has this ever happened before? Amazing, what a few well-placed rumors can do for completeness—al]

Blacker: Here it is, barely November, and already the house is bustling with Interhouse-building activity. The amazing Geodesic Dome of Doom™/Not-Quite-Yet-Pulsating Sphere prototype went up in just under two hours under the leadership of John "Sun"-RA Salmon, Pete "I'm too cute to build Interhouse" Wenzel, and Nye "WheRe Is Our PotAto?" Liu. Look for the pit of intestines to accompany what is likely to be one of the most bizarre Interhouse plays in recent memory, and for the Rob Padula, VSM, -designed papier-mache frosh to lie sprawled underneath the house meteOR. Note that all of these things tie in with Blacker Hovse's Interhouse theme of DEATH. Yeah, that's right. DEATH is the Blacker Hovse Interhouse theme, and the Blacker Hovse's Interhouse theme is DEATH.

In other oh-so-important and entertaining house news, several Blacker Hovse members enjoyed the sweet taste of success in attempting the annual negative-time Tommy's run. The Black Hand returned to snack on a few more unsuspecting Frosh, while a diligent few desperately sought to be enlightened, missing their goal by ever so little. How ironic that such attempts will always come up short unless one follows the words of He Who Is Dark:

1. Resistance is useless.
2. No frosh may know the hour of his/her enlightenment.
3. A wet frosh is a happy frosh.

The Black Hand has spoken.

Speaking of heavy balls of lint and their widespread effects on global climate, Ben "Drop classes: it feels good" Holland, Graham "Why did they have to kick all of the high school kids out?" McNamara, and Harry "Basically on the axis" Catrakis tell of a most interesting field trip to Burbank. Ask one of them about it for details. [Coy references? Spill the beans. What do you think newspapers are for? -tomy.]

Unless the pope has lost 99 other purity points lately, the score of Glenn "evil master of house purity symbolism" EychanOR has passed the golden 10 landmark.

Run KELROF. Bribe a waiter. Build Interhouse. Get the phone.

—Throw Haba at Ricketts

Dabney: First, let's get the relevant stuff out of the way:

- 1) We're having a Heavenly Interhouse according to the following reaction:
CO₂ + H₂O + toilet + tinsel + white paper + bed sheets → Heaven?!

2) Last weekend was the RA Barbecue without David A. Edward's special sauce (unless he sold his recipe to Kraft) and Blacker Theatre (yes, damn it, Maneesh was in charge of it, so it's Theatre). Twenty masturbating men for two amazing hours in forty-four amazing square feet. A true Dabney tradition.

3) Miriam Myjak has departed. We'll all miss you, Miriam—but we still had a roompick as soon after you were gone as possible.

Now, for some more answers to those burning questions about what goes on in Dabney Hovse (i.e., the noncosmopolitan part).

What are all those scantily clad women doing in Alley 2? These pictures constitute the "Women of Chris Bond" calendar. Last year, when Chris was on leave, he claimed to be on the East Coast. However, this reporter has learned [I have learned, Dave, it's not a fucking news article—eds.] that the trail of mystery and intrigue actually leads to Bermuda, where Chris became an internationally known playboy and photographer under the pseudonym "Todd". Chris will be coming out with 5" x 7" pictures of the twelve gorgeous women in the hopes that Rus May will put them in his picture frames, rather than leaving in the pictures that came with them when he bought them.

Who is this Pongskorn Saipetch for whom we keep getting mail? Pongskorn, nicknamed "Ko", in actuality does not exist. In the summer of 1987, then (as now) super-senior David A. Edwards did a psychology SURF to create a statistical representation of a typical Caltech student. The project, entitled "Donald F.: A Study in Normalcy," got out of hand when David read in the Weekly World News that a middle-aged couple in Thailand had lost their memory after eating tainted rice. The wily David saw his chance, and lo! "Ko Saipetch" was born. Convincing the poor family that they indeed had a son who was going to Caltech, David sends them term bills every month. But this reporter has learned that the social security numbers of "Ko" and David A. Edwards are exactly the same! To further substantiate his identity as a Caltech student, David signed "Ko" up on seventeen computer junk mail mailing lists.

Where does David A. Edwards get all the money to stay at CIT for eight years? See above.

What's all the stuff in Alley 7? The black substance which has been found on the carpet, in the bathroom, in the shower, in the kitchen sink, in the refrigerators, on the countertops, and in the microwave ovens has been determined (after several weeks of analysis) to be the hair of one Right Hand of Dave. RHoD, who, though officially residing in his pocket, seems to spend an inordinate amount of time in [censored—read "a bag of oreos."—al]. It overdosed on Dr. Oliver's Magic Cat-Sweat Hair Tonic after mistaking it for cold cream. However, Dave is not one to sit idly by in the midst of tragedy. [I—eds.] have learned that Dave has sold the serial rights to his story (entitled "The Incredible Balding Hand") to the "Weekly World News" for \$100,000, after the "California Tech" could only offer him free tickets to second-rate movies. [Could and would are two distinctly separate issues.—PJS] The shocking truth does not seem to affect his friends: upon repeated questioning, one editor responded: "Dave's Inside Worlds are great; they give us a place to put gratuitous offensive statements."

Next week: **Playpen Breeding: Fact or Fantasy?** (Or has that already been done?)

—Peter Gabriel

Fleming: Aah! It's good to be back in the paper once again. Seems last week's incredibly hilarious inside world was preempted by some worthless frosh attempt at humor. There happened to be an all-frosh table at dinner that night (What a Sooprise) and all frosh in attendance, I'm happy to report, were very happy [For the uninformed, this is a Flemish euphemism for "wetter than a drowned rat."—PJS] by the end of dinner. In light of the fact that the editors are going to print any Fleming inside world that gets dumped at their doorstep, (over Jim Burleigh's dead body), I thought that I'd print up some general rules governing said article.

First of all, this isn't the Page Inside World, so don't include a lot of one-sentence meaningless inside jokes that, at most, two people in the house are going to get. Secondly [See reply to the following question.—PJS], nobody gives a flying fuck about who said what stupid thing to whom (or vice versa) in whatever alley at whatever hour. Thirdly (is there such a word?) [Yes, but you've botched the usage. The word you were looking for is "third."—PJS], don't use lame, limp-dicked nicknames [Are you implying that the handicapped are impotent?—PJS] unless they are the ones duty given to deserving frosh. And, for crying out loud, don't give the head waiter a list of so-called nicknames that lists things like "Apostol," "Left Hand Rule," and other disgusting Techer type things. [Are you now implying Techers are

disgusting?—PJS] (When will they ever learn?) And lastly, if you think, and I emphasize think, that you have some nifty little tidbit of news that the world just can't live without, see ME about putting it in the column. I'll listen to any half-assed idea thoroughly before laughing my guts out.

[Actually, we picked the one we printed more or less at random. Except for the names, they were virtually indistinguishable.—tomy & al]

Football against the Scurves? Well I guess you could call it that. 33-6... what can I say. We actually fucked up and let them score some points. Hopefully Colello will get over that "miraculous" catch he made and then the rest of us won't have to hear about it anymore.

Alley Five Domination, I mean Fecathlon started last night and will conclude tonight. Vomit Mop DQ'd alley one in cracker eating, while alley Six got away with blatant cheating and assault with an unlicensed saltine. Of course Five won the event easily. Girls girls everywhere... until you need them for condom inflation. Wendy and Laura and four eager male volunteers blew their brains out on some pre-tested Trojans supplied by the IACCOFH [Have't the foggiest on the one. Inconsistent Avatar of Cock-sucking Cuckolds On Fleecy Heines?—PJS] (Did he wear them to the event?) I have no idea who won because I was too busy documenting the spectacle on film. Anybody want a graduation picture? Anal Spelunker surprised everyone by downing a liter of water in a blazing 8.9 seconds... could be some crew possibility there... then again maybe not. Once again Hocking for Darbs was the favorite contest of the evening. Nobody scored a direct hit, but the phlegm was a'flyin'. I sure wouldn't want to go barefrot through that walkway for at least a week. Then again I never want to go through that walkway at any time. [Just wait until the oranges ripen, phlegms!—al]

Tonight starts the gross events. TP eating, egg eating, beer sucking, and cigar smoking. Afterwards everyone is going to go puke in Ruddock's courtyard.

This week's social event is red hot comedy at the Ice-house. If past trips are any indication we're gonna have a bitchin' time. Frosh bring your I.D.!

I'm sure we're playing somebody in something this weekend, but I really have no idea what. Did Bill make an announcement or not? Maybe he'll speak up with a little cold water, incentive.

Last week's Top Ten List.

The top ten reasons why I couldn't think of a good top-ten subject this week:

10. No inspiration.
9. Had to finish some needlepoint.
8. Still in daze over World Series.
7. Bush or Dukakis...Dukakis or Bush?
6. Felt guilty about floating frosh.
5. Just got new issue of Mellow Mail.
4. Working too hard on Interhouse.
3. BEM 100 took me forever to finish.
2. So many women...so little time.
1. It just wasn't that fucking important!

Remember...NO POOFAS!

—The Albino

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More Inside World

Lloyd: This week has been a very lame week for Lloyd House. Thus keeping up with this tradition, let's begin.

First, a cheap David Letterman takeoff, a Lloyd House "post Halloween" quiz.

- Why didn't Dave Jeitner wear a costume to the Halloween bash?
 - He's just too lame to get into that rumba spirit
 - The party made a mockery of such a solemn sacred Satanic holiday.
 - He was afraid he'd be mistaken for Cher.
- The house pumpkin carving contest was a success because
 - Dave was allowed to carve the "evil cow" on something other than frosh.
 - Fingal's Cave kept Emily Wen away from the knives.
 - The contest was followed by a rousing rendition of Queen's "We are the Champions."

Enough of the quiz, so here's "lame take-off" number two.

TOP TEN COSTUMES AND THEIR OWNERS

- Randy Stevenson and his skybed as Niagara Falls.
- Ian Dutton as "the rowdy punker" or "Strawberry Shortcake" (we're not quite sure.)
- Iron Mike Ida as Otis from "The Andy Griffith Show"
- Jack Prater as the token minority student at a competitive technical institute.
- Matt Class as Johnboy from "The Waltons"
- Ari Kaplan as the coolest man alive
- John Haba as a chicken not swinging to progressive jazz
- Jack Boyce as a daddy-o bugged up with fear.
- Brian Fuller as James West on "The Wild, Wild West"
- Adam Weissman as Davey Jones. Shake that tambourine, baby!

LWF NEWS: Hacksaw Craig Sosin suffered injury at the hands of the Million Dollar Man, Mark Lakata in a controversial dressing room skirmish. Also in action this week, the Commissioner took on five of GLOW's toughest wrestlers, Fiona of the Outback, "Farmgirl" Garland Lee, "Luscious" Janet Lai, "Mayhem" Tseng, and "The Ultimate Warrior" Maria Toronto. When "Cowboy" Steve Carson tried to get in on the action to protect his GLOW wenchies, the match was declared a draw.

—Yabba-Dabba-Doo and Jason, too

Page: Ahem.

First off, MATHSUCKS. This is one word, a compound word, for those of you with an inadequate education in the humanities.

On the same note, FIZSUCKS (but only in theory), LLOYDSUCKS, and JEITNERSUCKS. And if you insist, CHEMSUCKS — but only in the lab.

Now for the news: It's been an anxious week for the House Bell, as she hovered on the verge of being showered for days, while Lloyd House tried to play games with us. Fortunately, the bell was recovered intact; the only damage being to Dave Jeitner's ego. (House Discussion, Frosh!)

Greased Frosh races were Sunday. BEGGAR'S CANYON came in 3rd, followed by Weight Alley / Emm's Alley (1st), Bappa's Boppers (2nd), Keana's Social Coma Alley (4th), and all other alleys combined (Counterweight, Twilight Zone, Underweight / Wimp / Nurl, etc.). A good time was had by all, some perfectly good clothing was ruined, and certain frosh roommates took long, hot, soapy showers together (No, I wasn't specifically referring to Tamaki and Chris.). We know we looked silly walking down the Olive Walk naked after showering in Lloyd, but at least our drains aren't clogged with Crisco. And get a clue, Dave, why would we take your shampoo? — Except to donate it to certain Darbs who really need it, or, maybe, as ammunition for PCD Eve...

Page House has finally decided on a theme for Interhouse. Close your eyes and picture yourself lazily floating about the Hawaiian coast covered with cocoa butter and sipping champagne. Yes, you guessed it. It's a Winter Wonderland Interhouse. Tequila snow cones for everyone! Start building, Frosh, before George has to pull out his big stick and get nasty...

And in our final, pre-election poll, 3 out of 5 Page House Presidents prefer oral sex (but can't afford the phone bill).

Prediction of the week: Page will dominate and destroy all in Interhouse Soccer (a real man's sport!)

Rumor of the week: Emerson is a budding social butterfly (please don't ask me to explain, Dave).

Ruffles will rule the world!

And the fat lady's singing again (or is that Gary in a dress?)

—Dirty White Boy & the Stupid Boy (Sucker for Love)

Ricketts: It is simply amazing how much time I have to write these Inside Worlds. Charles just comes up to me and says, "How would you like to write the Inside World?" I say, "How long do I have?" "Two hours." "No Problem!!!!" So I will fill this space with inanity as Charles has requested.

Helpfully, Charles and Joe just came in and offered (hat) to help me. Tell me, what do you want to write about? Did Kit get showered enough this week? We don't know. But she was royally moistened Nov. 1, the official beginning of Shower Kitt Month. Other houses are encouraged to grab Kitt off the Olive Walk and shower her.

What Phlegms?
What are the strange noises emerging from 17? When Paul's away, the Kats will play. (This is the official bash Kat IW.) A local man was heard to say, "And I do stay up late, folks!"

And now to our official reporter at Snerc, Lindsey Dubb. To you Lindsey!
"And here I am at Snerc corner investigating the report that someone here stays up really late. It's four in the morning and I don't see anyone around. We're still getting a tricorder reading on that person who stays up really, really late, but I don't see him anywhere. Back to you, Guru!"

And since microwave Armageddon has passed through Snatch, people have been heard to say, "Smell that? I love the smell of burnt popcorn in the evening. It smells like midterms week! (Walt lives!)"

In response to a question asking him to speak, Jim "Mangoman" says, "That was INCREDIBLE!" We can only speculate as to what he meant.

Gazebos find his mutant powers useless against the minions of the termite queen!

JAZZ-BO!
I personally did not see the pumpkin drop, but we did!

Rumors of Bible studies in Crud have reached our ears. Has the Second Coming been and gone? Changing Cruddies to Bible studies takes a lot of chutzpah.

Since we're all sitting around a tiny Mac yelling and screaming at each other to write this Inside World, except for the editor REtyping this in, who's sitting alone and far too late with many better things to do, I vote we (shut up!!! I'm typing!!!)...

Classical mechanics sucks the great golden gaudy greasy gonads of God! (says the teched) the infinite wang o'God! (says the Guru). Sam cut his hair, why didn't Shroom?

This is a really lame Inside World, if I must say so. [No shit. —all] Just can't get good help these days, I guess. Those of you who went to the Halloween party night have noticed a blonde with, shall we say, unusual hair. Did anyone throw gems at her? She still won't tell us what a rear underwater approach is.

She just told us, but ask her yourself...
It's simply amazing how many frosh have massive speakers and just BLAST THE FUCKING HALLWAY WITH SOUND WHEN YOU TRY TO PLAY THAT EVIL COMMIE VIDEO GAME (vote Gorbachev!) and suchlike.

Since the Ricketts fencing team traditionally writes the IW (as of last week), we just combine the fencing reports and IW. Here it is: *ahem, cough cough* and there you have it! (What lameoids!)

It's Dan and Laura's third anniversary. She played THAT EVIL COMMIE VIDEO GAME WHICH WE SHALL NEVER NAME FOR FEAR OF THE TETRIS-GOD (brzap! kablam! wango!) oops... for the first time today. Is there a connection?

Are you tired of reading this? [I'm sure damned tired of typing it. —all] They are, but I'm not (gack, mf, uhh...) (Sensational sound effect here! —courtesy "Boris the Bear.")
Back to Lindsey Dubb, our man at Snerc Corner:

"I still don't see anyone awake and it's getting really late here... wait! There's someone coming down the hallway! Oh, pardon me. Hey mister! Oh, it's just a mirror. Darn. Well, I'm still waiting for someone who stays up really, really late."

This Inside World ended courtesy of RUA, who has to do an assignment on the Mac. This Inside World has been brought to you by the letter Q, the number 42, and the bird Bobolink (What the hell's a Bobolink?! [Haven't the foggiest. —PJS])

—Orange, Guru, Chef, and the roommate of Kitt's new collectible. Excelsior, dudes!

Ruddock: Quote of the week...

"Those who can't do, teach."

This party sucks! Midterms suck! Don't talk to me! I'm outa here! This party sucks! Absolutely nothing exciting happened this week, so we'll make some stuff up that will insure an exciting next week.

Top Ten things Paul can do with his butt:

- Chew gum
- Knead bread
- Sharpen pencils
- Open the door to a hamster cage
- Wax his hair
- Crack walnuts
- Bend pins
- Shuffle cards
- Read the date off a quarter
- Sigh Rachel's name

And now for some controversial verse

There's always been a hole between Milton and Bets.
A hole is a hole, straight, not bent.
A new hole has entered Milton's life,
A hole that's created tremendous strife.

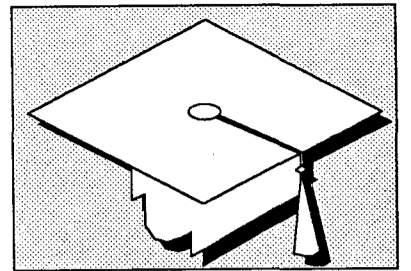
Poor Milton, poor Milton, what will he do?
He now has three holes, he can only fill two!
He's tried to fill both, one after the other.
Hopefully, dear Rudds, he won't go after their brother.

The Random Llyodie Orientals are here.
They're in Alley 4, looking for their dear.
"She's gone to Westwood," Nancy said with a grin.
So they all left for Blacker, to visit her kin.

Ceila and Nancy say Lisa has some new toys.
They're west on the Olive Walk, they're called the Page Boys.
Nancy explodes in a laugh, Ceila merely turns red.
Often the best rumors are those left unsaid.

Ruddock house, where the men are men.
Ruddock house, where the women can take it.
Ruddock house, where anything can happen,
And if it doesn't, the writers will fake it.

—Yours truly, Jaded and Cynical



Crime on campus

from page 1

Of the 684 schools reporting, 316 said thefts accounted for more than half their crimes. On 90 campuses, larceny is more than 80 percent of the total.

Not all police think reporting their crime totals is a good idea. Some said they didn't keep records. Some said public disclosure was unfair because every police department defines crimes differently.

Georgia's Boynton said some schools don't report crime because "they're fighting for students" and concerned about their image. If police chiefs were candid, he said, many would say: "I'd like to report but my boss says I can't."

The Pennsylvania Legislature, prodded by Howard and Constance Clery, whose daughter was killed at Lehigh, took on that problem this year. Starting Nov. 1, all Pennsylvania schools must publicly report their crime statistics.

Similar laws are being considered in seven other states — Illinois, Massachusetts, Missouri, Washington, Indiana, New York and New Jersey, says Penn State's David Stormer, who's tracking the issue for the campus police association.

The Clerys are turning to Congress, seeking a federal law.

"We're trying to save lives," Howard Clery said. "Crime on campus is one of the best-kept secrets in the U.S."

Contributing: John Hanchette and Denise Kalette.

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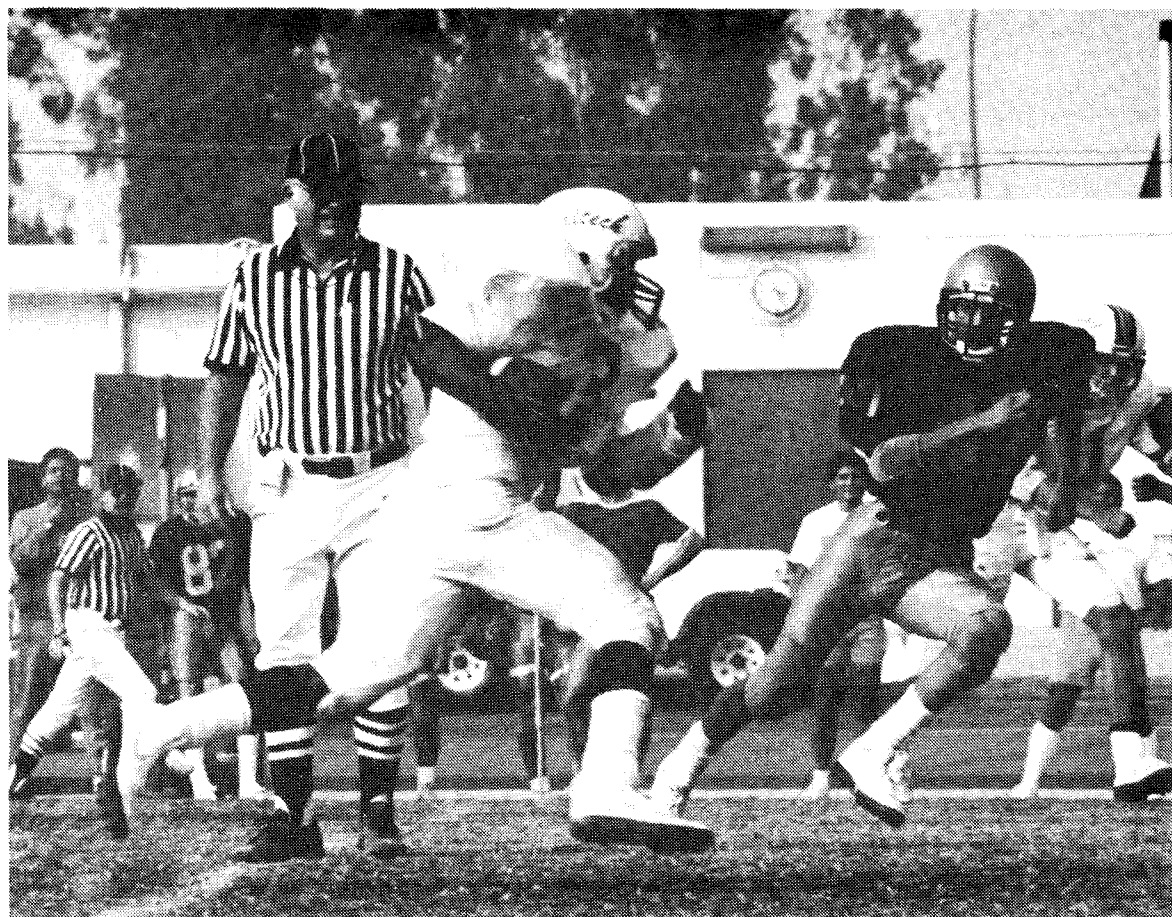
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Caltech Beats All-Stars 14-6

by Robert Hanna

The Caltech football team continued their winning season as they defeated the San Fernando All-Stars 14-6 Saturday, bringing their record so far this year to 4-1. Leading the charge this Saturday was Vince Riley, who made the first down of the game on a 23-yard run.

However, this weekend the deciding factor in the game was the battle between the two opposing defenses. Early on in the second quarter, Caltech showed that they weren't going to be intimidated. With the All-Stars on their own 31-yard line, Scott Mishkovich blew by the opposition and laid a heavy hit on the San Fernando

quarterback. The blow fierce enough that it forced a fumble. Jeff Cavallaro, on a heads-up play, recovered the ball and ran it all the way back to the All-Stars' seven-yard line.

Once Caltech had the ball within the ten-yard line it was no problem for the offense to make the conversion. On the second play of their possession, quarterback Steve Buratto went back and fired off a pass to Dwight Berg who was wide open in the end zone. Berg handled the pass with no problem and scored the touchdown.

At this point the spirits of the All-Stars must have been pretty low, as quite a bit of foul language

could be heard coming from their bench and they were called for unsportsmanlike conduct, another in a series of penalties that hurt the All-Stars more than anything else during this game. By the end of the game, the San Fernando team had collected a total of 19 penalties for well over 100 yards.

A second factor hurting the All-Stars was sacks. Caltech had about six sacks in the game, some for high losses in yardage. Some of the main players credited with sacks were William Bly, Scott Mishkovich, James Moore, and Curtis Trimble.

Run All Night

by James Shih

Some say it's a combination of camp-out and marathon. Some say it's an endurance run disguised as a track event. Most think it's crazy. It's around the Caltech track. It's 24 hours long. It's KELROF, and it's Saturday, Nov. 19 at 9AM

The idea is simple: A relay team of no more than 10 people (no fewer than 2), with each person running one-mile legs, attempts to pass a baton (or rubber squid) around the track as many times as possible in 24 hours.

This fine tradition was started at Caltech in 1977 when the Track team runners, looking for a glorious way to finish off the season, decided to *do it*. Steve Kellogg, then a Page Freshman, organized this event originally suggested by the "Runner's World" magazine. The official name of the team was KELROF (for Kellogg's Eighth Light Regiment On Foot).

On the morning of 21 May 1977, KELROF and a second team of Page frosh set off for their places in Caltech history.

Amid a first stage smog alert during the day and a damp fog during the night, the KELROF team finished 247 miles, averaging just under 6 minutes per mile.

The next year, five teams came out. KELROF II set the still-standing school record of 262 miles and 1316 yards—7th in the world for that year.

In 1979, seven teams joined in on the fun and excitement. KELROF III missed breaking their previous record by a mere mile.

In 1980, seven teams again were out there on the track. KELROF IV finished with 254 miles. A three-man team also entered.

All written records for the next four KELROF's seemed to have been either burned or shredded. Rumor has it that a two-man team raced—they didn't finish, but did last over 12 hours. Apparently no

organized effort to break the school record of KELROF II was made during those years. Lack of interest forced the cancellation of the event in 1985.

1986 marked the beginning of a new chapter in KELROF history. Four happy teams (Blacker, Lloyd, Page, and Dabney-Fleming-Graduate Students) came out on a Saturday morning in late May; four happy teams finished on a Sunday morning in late May.

Despite major conflicts with Alumni Day, Glee Club Concert, Fleming Sports Day, and Math 1c midterms, 1987 KELROF drew five teams, a total of 49 runners. Among them was a team of 9 woman runners organized by Bibi Jentoft-Nelson—with a guest appearance by Jeanne Noda running the first mile as the 10th runner.

In an attempt to avoid conflicts late in spring term, last year's KELROF was run in the fall. Nine teams, including 70 people, showed up. Bibi, Carmen Shepard, and Pat George entered as a three-woman team.

By daybreak, they had accumulated over 135.5 miles, unofficially breaking the 3-woman world record by over 20 miles. Also seen was a KELwalk team with Cliff Kiser and Mark Vaughan each recording a one-hour mile and Rob Padua taking his math midterm during the race. The other teams logged from 150 to 220 miles.

For this year's KELROF, rumors point to a graduate student team, at least one Blacker team, and at least two Lloyd teams. Bibi wants to do a 2-woman KELROF.

Food, fresh fruits, and drinks will be provided throughout the race. A trainer will be on hand, and the gym will be open for the night.

If you think you might have a team, or if you don't think you can get 10 people but want to run anyway, please call Bibi at x3762 or James at x3968 soon.

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Women's Volleyball Club Loses Three In Row

by Lynn Hildemann

The Caltech Women's Volleyball Club started another streak of a dubious sort a little over a week ago, losing three matches in a row. Last Wednesday, Oct. 26, the Mt. St. Mary's College team defeated them in an away match 3-0; Saturday, Oct. 29, the Redlands JV team beat them in an away match 3-0; and on Halloween night, the Loma Linda team defeated them 3-1 here at Caltech.

Mt. St. Mary's

The losing streak started at Mt. St. Mary's with the 5-15, 5-15, 9-15 defeat on Oct. 26. At a home match on Oct. 15, Caltech had beaten Mt. St. Mary's in three straight games. While Mt. St. Mary's looked much better on this occasion than they had previously, Caltech still should have been able to beat them.

However, the Caltech team forgot to bring their ability to serve to the match. With the setters chasing

passes all over the court, Caltech lost in three straight games.

Redlands

The losing streak continued at Redlands with another 3-0 match, 6-15, 3-15, and 9-15. The women left Caltech last Saturday morning at 9AM to travel to Redlands. The team had substantial motivation to play an inspired match—the Redlands coach had called Caltech coach Laurianne Williams earlier in the week to try and cancel, explaining that the

Redlands team would have great difficulty getting motivated to play well against a team of Caltech's "calibre".

This news was a surprise to Caltech, since in a previous match this year, Caltech had almost taken Redlands to five games, winning the first game and losing 16-14 in the fourth game of the match.

Traditionally, Caltech plays "Redlands JV", which by arrangement with the Redlands coach is allegedly the bottom six of the varsity team. However, on Saturday, the Caltech women found themselves facing most of the Redlands starting varsity lineup.

Even though Caltech played relatively well, they were no match for this Redlands team. Caltech ran into trouble on serve receive against two of the Redlands players with especially nasty serves. The Redlands team also had a knack for consistently hitting or dinking the ball into holes in the Caltech defense. Caltech lost three straight games in less than one hour.

Loma Linda

On Halloween night, Caltech lost the last home match of the season 3-1 against Loma Linda University, 6-15, 13-15, 15-11, and 7-15. In honor of the occasion, the women wore orange shorts festooned in the back with jack-o'-lantern faces.

The Caltech team started out the match rather well, with accurate passes, nice sets, and some good offensive plays. However, early in the first game, they ran into trouble. The Caltech women repeatedly served long, out of the back of the court. Subsequently, the Caltech team went downhill. Passes to the setters became less and less accurate, and mental lapses became more frequent.

After losing the first two games, 6-15 and 13-15, Caltech staged a comeback. In the third game, Loma Linda suddenly grew tentative in their serve receive and began mishandling passes. The Caltech team became reanimated, and opened up a big lead, mainly on the strength of their serves. After missing their first several tries at game point, Caltech finally put the game away, 15-11.

However, Caltech could not keep their momentum up in the fourth game. Loma Linda rediscovered their serve receive, and Caltech was unable to put their spikes down for kills. Caltech's tall front line was able to shut down Loma Linda's ability to hit hard much of the time, but the back row was unable to handle the dinks and other junk that came over the block, and Caltech succumbed to defeat by a score of 7-15.

WEEKLY SPORTS CALENDAR

Day	Date	Time	Sport	Opponent	Location
Fri.	11-4	12 noon	Water Polo	SCIAC Final Round	Caltech
Sat.	11-5	8:00AM	Water Polo	SCIAC Final Round	Claremont-Mudd
Sat.	11-5	10:00AM	Soccer	Whittier	Whittier
Sat.	11-5	11:00AM	Women's Volleyball	Whittier Alumni	Whittier
Sat.	11-5	1:00PM	Fencing	CSLB & Cal State Fullerton	Cal State Fullerton
Sat.	11-5	1:30PM	Football	Cal Poly Pomona	Caltech
Sun.	11-6	12 noon	Water Polo	SCIAC Final Round	Claremont-Mudd
Sun.	11-6	11:00PM	Ice Hockey	CSUN #2	Pickwick Ice (Burbank)
Sat.	11-12	10:00AM	Cross Country	NCAA III Regionals	Castaic Lake
Sat.	11-12	12 noon	Fencing	San Diego State	Cal Poly Pomona
Sat.	11-12	1:30PM	Football	Bellflower Bears	Caltech
Sat.	11-12	2 & 4PM	Basketball	Alumni	Caltech
Sat.	11-12	TBA	Wrestling	Cal Poly San Luis Obispo	San Luis Obispo
Sun.	11-13	11:15AM	Ice Hockey	Cal Lutheran	Pasadena Ice Center



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what goes on and on

Men, Women Finish Fifth in Conference

by Scott Kister

The Caltech cross-country teams traveled to Castaic Lake to compete in the SCIAC Championship meet. The course was the flattest of the year and was mostly on pavement. The fast course and perfect weather helped all 14 varsity Caltech runners to run their best time of the year.

The Women

The results of the women's race were Occidental 21, Claremont 48, Pomona-Pitzer 71, Whittier 121, Caltech 125, and Redlands 139. LaVerne forfeited because they did not have five runners.

Every varsity runner on the women's team improved relative to the other teams. The team was led by freshman Jerri Martin, who finished third overall. This is the highest place a Caltech runner has finished in the conference since 1979. Martin's time of 19:07 on the 3.1 mile course was just seven seconds behind first place.

Michelle Trimble of Occidental won the meet for the fourth straight year. Both Trimble and the second place runner are seniors, making Martin the top returning runner in the conference next year.

Margi Pollack finished 27th in the conference with a time of 21:26. Bibi Jentoft-Nilsen finished one place behind in 21:55. Golda Bernstein was 32nd in 22:24.

Emmeline Naranjo improved her best time by over 90 seconds to 23:23. That earned her 35th place. Liz Warner was 37th in 24:18. And Mary Rowe was 39th in 24:39.

The women finished the season with seven wins and eight losses in dual meets. They finished fifth overall in the conference.

The Men

The results of the men's race were Occidental 22, Claremont 42, Pomona-Pitzer 69, Redlands 101, and Caltech 131. Whittier and LaVerne did not have full teams.

The men all improved tremendously. Six of the top seven beat their previous season best by 80 seconds or more.

Freshman Dan Flees ran an outstanding race for Caltech. He finished 18th overall, putting him on the second team all conference. His time of 27:56 on the five mile course was two minutes faster than his previous best. Flees improved by six places against the other teams relative to his last race against them.

Scott Kister finished 24th overall in a time of 28:28. Ed Naranjo moved up to third on the team. He ran nearly three minutes faster than any other meet this season to finish 29th in 30:20.

Taking the next two places were Chris Campo in 30:41 and Mike Mahon in 30:55. Kurt Storm finished 34th in 31:52. John Raguin finished one spot behind, in a time of 32:06.

Jeff Willis, who was not in the designated top seven, finished sixth for Caltech with a time of 31:38, but did not count in the official results.

For the season, the men had six wins and ten losses in dual meets. They finished fifth overall in the conference.

The Next Race

The next and last meet is the Division III Western Regional meet. It is held on November 12th on the same course as last week's SCIAC meet. Only the top seven runners for each team are allowed to run. Jerri Martin has a chance of qualifying for the national meet in St. Louis. She needs to finish in the top five of runners not on the winning team.

The team is trying to get a lot of people to watch the race and cheer the runners on. If you would like to go, come to the gym at 8:00 AM Saturday. The course is at Castaic Lake, so bring your swimming trunks.

Run To New Zealand

The Doo Dah Run is a 5km run/walk welcoming people of all shapes, sizes, speeds, and vintages. Runners/walkers are encouraged to wear costumes and vie for running float awards presented to best costumed individuals and groups. The overall male and female winner for speed rather than style will each win a round-trip ticket to New Zealand with a sensational land package. Second place winners overall will each win a round trip ticket to Hawaii. All proceeds from this event will go to Five Acres, a non-profit organization that provides a home and specialized care for abused and neglected children.

The race will be held on Sunday, Nov. 27, at 7:30 am and will start at Colorado & Garfield. Registration is \$12 before Nov. 23 and \$15 after. For information call (213) 975-KRUN.

Need A Club Mailbox?

If your club or student organization does not have a mailbox on campus, and you would like to have one, see Nancy Matthews or Milly Pena, at the Student Activities Center, 1:30-3:00 pm, Monday-Friday.

Oh No, Another Totem!!!

Attention writers, poets, and artists! The second Totem in as many years will be coming out this year, in the spring. Within the Totem will be a complete and diverse collection of Teachers' expressed wisdom and imagination. If you want to see your creative efforts in print, send in those stories and drawings. Address works to mail code 116-58. For additional info contact Sam Dinkin (1-59 or x3828), or Erik Russell (Annex #5, 1-59, x6188). Also available are extra copies of previous issues of the Totem.

Living In Space

In a lecture presented by OASIS, Chuck Stovitz will talk about the social challenges of living in a space colony. The isolation of a colony and interdependence of its members force us to review our notions of privacy, freedom of speech, and other standards of conduct and moral behavior.

Mr. Stovitz lived and worked in Antarctica in 1984 to study its "space analog conditions." He is a special consultant to the National Science Foundation.

The lecture is on Saturday, Nov. 12 at 7:00 pm in the Main Auditorium, Santa Monica Public Library, 6th St. and Santa Monica Blvd. in Santa Monica. All welcome, admission free. Pay parking (cheap) next to the library. OASIS is the Los Angeles and Orange Counties chapter of the National Space Society.

Play With Money

The Caltech Student Investment Fund meets every Wednesday in Millikan Board Room at 5 pm. We have a fund of over \$140,000 that we use to buy and sell stocks and bonds. Profits are used to buy pizza and soda for every meeting, and to go out to dinner at the end of the year. (Well, maybe a few other things, too.) For more info, please come to a meeting.

NRC Research Associateships

The National Research Council has Resident, Cooperative and Postdoctoral Research Associateship programs for research in the sciences and engineering to be conducted on behalf of 30 federal agencies or research institutions, whose 115 participating research laboratories are located throughout the United States. The programs provide opportunities for Ph.D. scientists and engineers of unusual promise and ability to perform research on problems largely of their own choosing yet compatible with the research interests of the supporting laboratory.

Approximately 450 new full-time Associateships will be awarded on a competitive basis in 1989. Awards are made for one or two years, renewable to a maximum of three years; senior applicants who have held the doctorate at least five years may request shorter tenure. Annual stipends for recent Ph.D.'s for the 1989 program year will vary from \$27,150 to \$35,000, and will be appropriately higher for senior Associates.

Applications must be postmarked no later than 15 January 1989 (15 December for NASA) for the first competition, 15 April and 15 August for the later competitions. Information and applications may be obtained from: The Associateship Programs (GR430A-D1), Office of Scientific and Engineering Personnel, National Research Council, 2101 Constitution Ave. N.W., Washington, D.C. 20418.

Environmental Talent Bank

The Environmental Talent Bank, whose goal is to move troops of environmentally-committed individuals into federal government jobs after the election, is recruiting the nation's best and brightest for careers with the federal government.

Project Blueprint, a coalition of the nation's major national environmental organizations, is also assembling a broad range of environmental policy recommendations which will be presented to the new Administration soon after Election day.

For information, write: Environmental Talent Bank, 1001 Connecticut Ave. N.W., Suite 719, Washington, DC 20036.

Dr. Albee Speaks To SEDS

Come to the next meeting of Caltech SEDS, where we will feature Dr. Arden Albee, Dean of Graduate Students, who will discuss his recent visits to the Soviet Union. Dr. Albee is a leader in the U.S. space community on joint U.S.-U.S.S.R. ventures to the planet Mars. The meeting will be held at 8 pm on Tuesday, Nov. 15 in 24 Beckman. For info, contact Irwin Horowitz at x4051 or 577-2788.

Arizona Honors Academy

The Arizona Honors Academy is offering a three-week seminar for exceptional undergraduates this summer. This is an opportunity for undergraduates to discuss important world issues with writers, sociologists, National Security Officers, historians, physicists, and Arms Negotiators. The deadline for application is 15 January 1989. For more information, please see Jacqueline in the Financial Aid Office, 515 S. Wilson.

Auditions For Figaro

Auditions for Mozart's *The Marriage of Figaro* (Act II) and the complete Beaumarchais play on which the opera is based will be Tuesday, Nov. 15 at 8 pm in Rm. 3, SAC.

Both works, to be presented in concert version on March 11, will be in conjunction with Music 101: Mozart Opera—The Marriage of Figaro. Although not a requirement class enrollment is encouraged. For further information, scores and scripts contact Dr. Donald Caldwell, x6197 or 3-58.

MacLovers Meet In MacValley

The MacValley Users Group announces that its November general meeting will be held Tuesday, Nov. 15 at 7:30 pm in the cafeteria of Burbank High School at Burbank Blvd. and Third St. in Burbank. Microsoft will present Word 4.0. For further information call David Lagerson, (818) 998-5546 or write MacValley Users Group, P.O. Box 4297, Burbank, CA 91503.

Discount Tickets!!

Discount tickets are available for the Western Americana Show. With the discount, admission will be \$4.25. Live performances feature Guns-Swords-Knives-Militaria-mountaineers and Wells Fargo Country/Western Music Festival. The dates for these events are Nov. 4-6 and Dec. 9-11 at the Los Angeles County Fairgrounds. The discount tickets have been placed at the Orange Walk entrance to the Student Activities Center, on the bulletin board marked SAC News.

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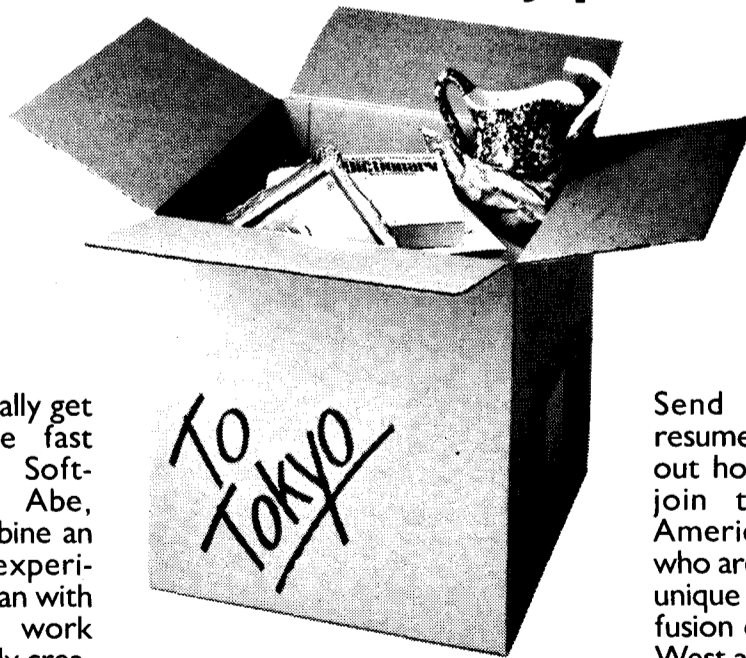
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what goes on the back page

Announcements for *What Goes On The Back Page* should be submitted on an announcement form available in the SAC room 37 (the copy/mail room) or on a plain piece of paper. Please indicate the date(s) you want the announcement to run. Send announcements to 40-58, or place them in the IN box beside the door of the Tech office, SAC room 40A. Announcements must be received by 5 pm the Tuesday before publication and should be less than 75 words in length. They will be published on a space-available basis and will be selected on the basis of size and general interest to the Caltech community. Announcements for commercial events unrelated to Caltech will not be accepted.

New Course—Chemistry 241a

Ch241a. Topics in Advanced Organic Chemistry. 6 units (2-0-4); second term. Prerequisite: Ch 41abc (Ch 144ab recommended, but not required). NMR basics and applications, with emphasis on multinuclear techniques used in structural analysis, including decoupling, NOSEY and COSY. Extensive practice in the use of some of these techniques will be available with the Chapman-Russell FT NMR Problems program. The practical use of NMR to determine reaction rates, as of conformational equilibrium, will be described, as will applications of NMR to imaging and spectroscopy of living systems. Instructor: Roberts. TTh 11 151 Crellin.

SWE November Meeting

The Society of Women Engineers will have Dave Marvit, BS '84, assistant film director of *Who Framed Roger Rabbit*, as a guest speaker at the November meeting. Dave will speak about his work in this movie and on *Real Genius*. Everyone is welcome. Refreshments will be served. Wednesday 9 November, SAC Room 26, 7:30 pm.

Johnny Guitar Plays Cinematech

Cinematech's feature film this week will be Nicholas Ray's *Johnny Guitar*. In the first of the so-called "psychological westerns" that began to appear in the early '50s, Ray has managed to create an exciting action picture also rich in content. The film, starring Sterling Hayden and Joan Crawford, will be screened on Saturday 5 November at 7 pm and 9:30 pm in Baxter Lecture Hall. Admission is \$1.50.

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EVENTS—

RUMMAGE SALE

Saturday, November 5, 9 a.m.—3 p.m.
Throop Memorial Church
300 S. Los Robles, Pasadena
Furniture, books, clothes, household goods, knick-knacks, much more.

HELP WANTED—

STUDENT WANTED to do database programming. Sophomore or junior preferred. Leave résumé or list of qualifications in the Dean's Office by November 11.

PROGRAMMER—MINIMUM M.S. computer science. Must know "C" and assembly for Intel 8086 and Motorola 68000 series, familiarity with IBM PC and Macintosh architecture. Experience in word processing and desktop publishing development preferable. Excellent opportunity with growth potential. Top salary/benefits. (213) 215-9668.

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SERVICES—

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RATES \$3.00 for first 25 words; 10¢ for each additional word. Send written ad with payment to 40-58. Deadline is 6 p.m., Monday before issue. No charge for on-campus lost & found.

Where To Vote . . .

If you have already registered to vote in the Tuesday 8 November election, but don't know where your polling place is, call (213) 727-1900. They'll need your name and ZIP code. They can also let you know if your affidavit was received on time (for last-minute registrars), and if you are thus eligible to vote in this election. Questions? See Nancy Matthews, Student Activities Coordinator, SAC Rm. 64. Office hours: MTThF 1:30-3 pm.

Einstein: The Practical Bohemian

"Albert Einstein: The Practical Bohemian" will star Ed Metzger at the Ambassador Auditorium on Wednesday 23 November at 8 pm. Tickets cost \$22.50 for orchestra seats, \$21.50 or 19.50 for balcony. Groups of 20 or more will receive a 20% discount when ordering through group sales. For more information call (818) 505-9757.

Return of SPECTRE

SPECTRE, the Caltech Science Fiction Club, will be meeting Wednesday 9 November in SAC Clubroom B (Rm. 15) at 7:30 pm. *Return of the Jedi* will be shown after the meeting. For further information call Mark Looper at 304-0006.

USC vs. Notre Dame

The Caltech Y has \$22 seats to sell at \$12 a ticket to students only, upstairs in Winnett Center. First come, first served.

An Ethical Seminar

Alex Roland, professor of history at Duke University, will present a seminar on "The Tyranny of Manned Space Flight" in the Judy Library on the first floor of Baxter Hall on Wednesday 9 November at 12:05 pm. The public and their brown bags are invited.

Last Chance for Coupon Books

The distribution for the Caltech 1988-89 Coupon Book to all current undergrad and grad students is complete. If you are a Caltech student and have still not received a book, come to the SAC and see Nancy (Room 64) or Milly (Room 38) in the afternoons. But hurry, as there are only a handful of books left.

Time Off To Vote

Employees who are registered voters may claim necessary time off to vote at statewide elections under the following provisions of the State Election Code:

"Sec. 14350. If a voter does not have sufficient time outside of working hours to vote at a statewide election, the voter may, without loss of pay, take off enough working time which when added to the voting time available outside of working hours will enable the voter to vote.

"No more than two hours of the time taken off for voting shall be without loss of pay. The time off for voting shall be only at the beginning or end of the regular working shift, whichever allows the most free time for voting and the least time off from the regular working shift, unless otherwise mutually agreed.

"If the employee on the third working day prior to the day of election, knows or has reason to believe that time off will be necessary to be able to vote on election day, the employee shall give the employer at least two working days' notice that time off for voting is desired, in accordance with the provisions of this section."

The polls for the General Election will be open from 7:00 am until 8:00 pm on November 8, 1988.

Amelia Earhart Memorial \$\$

The Zonta International Foundation offers \$6,000 grants to qualified women for graduate study in aerospace-related science or engineering in memory of Amelia Earhart. The deadline for application is 31 December 1988. For further information, please contact the Financial Aid Office, 515 W. Wilson.

Professional Engineering \$\$

The National Society of Professional Engineers offers scholarships to undergraduate and transfer students who are pursuing a degree in engineering. The deadline for application is 1 December 1988. For further information please contact the Financial Aid Office, 515 S. Wilson.

Scandinavian Scholarships

The American Scandinavian Foundation of Los Angeles (ASFLA) is offering 6 scholarships for 1988 to upper and graduate students with demonstrated interest in Scandinavia. Applicants must have strong academic qualifications and be majoring in business, arts, science, journalism, linguistics or music. The deadline for applications is Nov. 15. To request an application, write (or call) Jane Sandler, 217 N. Irving Blvd., Los Angeles, CA 90004. (213) 463-5394.

Clete Roberts Memorial \$\$\$

Clete Roberts, veteran broadcast journalist who covered battlefield stories from World War II to Vietnam and who reported in Southern California television and radio for more than half a century, is honored with two \$1,000 APTRA scholarships in his memory. Recipients must be planning a career in broadcast journalism. For more information contact: Rachel Ambrose, The Associated Press, 1111 S. Hill Street, Los Angeles, CA 90015.

NSF Graduate Fellowships

The NSF Graduate Fellowship Applications have finally arrived. Pick up your copy at the Career Development Center, 08 Parsons-Gates. Deadline for entering the competition is November 14, 1988.

Coffeehouse Interhouse Hours

The Coffeehouse will be open for lunch on the day of Interhouse (Nov. 12) from noon to 2 pm. We will, however, be closed during Interhouse itself. Regularly the Coffeehouse is open 8 pm to 1 am, M-F; noon to 2 pm and 7 pm to 1 am Sat-Sun.

Poetry Contest

The John Keats Poetry Prize of \$100 has been established by New American Poets, an annual award open to all U.S. College students. In addition, other prizes will be awarded at the discretion of the award director. Deadline: 30 November. Entry fee: \$1 per poem. No more than 5 poems per person. Must be previously unpublished, traditional rhymed forms or contemporary free verse. Name and address is required on each typed, legibly printed or photocopied sheet. Send entries to: New American Poets; 2395 Simmontown Road; Gap, Pennsylvania 17527. Contact Dominic Tomassetti at (215) 593-5750 for further information.

SAC Has Big T's

If you are entitled to receive a 1988 Big T and are having a hard time finding one, come to the SAC! Nancy, SAC coordinator, has Big T's in Room 64. Simply sign your name on the Big T list when you take one. Note: those not entitled to receive one may also take one and be billed \$24 by the Big T.

Planetary Society Scholarships

The Planetary Society is offering five \$1,000 awards to students majoring in engineering and science. Awards will be made on the basis of scholastic achievement, a commitment to a career in planetary related science, and a written essay on a relevant topic. The deadline for completed applications is 15 April 1989. Mail-in cards for further information are available in the Financial Aid Office, 12-63 (515 S. Wilson, 2nd floor).

SAMPE \$\$\$

The Society for the Advancement of Material and Process Engineering is providing 27-\$1000 awards in international competition in April. Students in their freshman, sophomore or junior year may apply. The applicant must be recommended by the department head or scholastic advisor. The deadline for application is 1 February 1989. For further information, contact the Financial Aid Office, 515 S. Wilson.

International Student \$\$

The seventh annual International Student Scholarship Competition—a nationwide essay competition for international students studying in the U.S.—is underway. First prize is \$1,500 to be used for academic or professional advancement. International Underwriters/Brokers, Inc., also will award \$350 to the International Student office of the first-place winner.

Deadline for the competition is 1 December 1988. International students interested in entering must submit an essay of no more than 1,500 words on the topic: "Important cross cultural clues are often found in humor. Compare humor in your country with humor as you find it in America. Include examples of humorous situations resulting from cross-cultural misunderstandings, either in the US or on your first visit back to your home country."

Additional scholarships will be awarded for second place (\$1,000), third place (\$500) and five honorable mentions (\$100 each). The International Student Scholarship Competition is open to all full-time foreign students enrolled in a prescribed degree- or certificate-granting program at an accredited high school, junior college, college or university with in the U.S. Also eligible are students enrolled in an English training program who plan to pursue higher education in the U.S.

For additional information, rules and entry forms, write: Essay Competition Coordinator; DSD Communications, Ltd.; 10805 Parkridge Boulevard, Suite 240, Reston, VA 22091.

More Engineering \$\$

Equal Opportunities Publications, Inc. offers two non-renewable \$500 scholarships to honor outstanding women, minority, or handicapped students who are pursuing a career in Engineering. For further information please contact the Financial Aid Office, 515 S. Wilson.

Goddard Memorial Scholarship

The National Space Club is awarding a \$7,500 scholarship for the academic year 1989-90 in memory of Dr. Robert H. Goddard. The 1989 award winner will also be introduced to the nation's leaders in science, government, and industry. The applicant must be a US citizen, in at least the junior year, and have the intention of pursuing undergraduate or graduate studies in science or engineering during the interval of the scholarship. The deadline for applications is 6 January 1989. For further information please contact the Financial Aid Office, 515 S. Wilson.

National Roofing \$\$\$

The National Roofing Foundation offers a \$4000 scholarship for full-time students enrolled in architecture, engineering, or other curricula related to the roofing industry. Applications and information are available by contacting Aimee Anderson, Scholarship Coordinator, National Roofing Foundation, One O'Hare Centre, 6250 River Road, Rosemont, IL 60018.

Electron Microscopy \$\$

The EMSA Council (Electron Microscopy Society of America) offers an undergraduate scholarship program to further the educational and research potential in students intent in pursuing electron microscopy as a career. The applicant must be a US citizen or resident alien and a full time undergraduate. The application deadline is 15 November 1988. For further information please contact:

Dr. Robert Price
Bio-Architectonics Center
Case Western Reserve University
2119 Abington Rd.
Cleveland, OH 44106

or contact the Financial Aid Office, 515 S. Wilson.

Big 10 Graduate Fellowships

The Committee on Institutional Cooperation (the athletic Big 10 plus the U. of Chicago) is offering fellowships designed to increase the representation of American Indians, Black Americans, Mexican-Americans and Puerto Ricans among Ph.D. recipients in the basic social science disciplines. Each award provides full tuition for the academic year plus an annual stipend of \$9,000. Interested minority applicants should contact: CIC Minorities Fellowships Program, Kirkwood Hall 111, Indiana University, Bloomington Indiana 47405. The application deadline is 6 January 1989.

GEM Fellowships

The National Consortium for Graduate Degrees for Minorities in Engineering, Inc. (GEM) is accepting applications for its 1989 Fellowship competition which will provide 150 awards to minority students in engineering.

Designed for members of ethnic groups that are underrepresented in engineering, the program's goal is to increase the pool of minority students who receive master's degrees annually in engineering. At the time of application, the minimum academic requirement for the student is enrollment in the junior year of undergraduate study in one of the engineering disciplines. Those presently in their senior year or recently graduated are also eligible.

Each fellowship pays tuition, fees and a stipend of \$6,000 per graduate academic year, as well as provides summer employment with a sponsoring Member Employer. The total value of the award is anywhere between \$20,000 and \$40,000 and depends upon which member university the Fellow elects to attend.

Applications must be received by 1 December 1988. Awards will be announced 1 February 1989. Information and applications may be obtained from:

GEM
P.O. Box 537
Notre Dame, IN 46556

1989 Markey Fellowships

The Mount Desert Island Biological Laboratory announces the 1989 Markey Fellowship Program. Applicants are invited from investigators in the biological and biomedical sciences for summer research at the MDI Biological Laboratory. Using vertebrate and invertebrate fauna from the Gulf of Maine, Laboratory researchers pursue diverse interests including the comparative physiology of the kidney, cell membrane transport, the mechanisms of cell division, and cellular and molecular aspects of environmental toxicology.

Preference is given to applicants several years beyond the completion of the doctorate demonstrating evidence of an independent research program and are still in relatively early phases of research careers. The Fellowships include laboratory space, housing, supplies and equipment, and other allowances. Applications and instructions for the preparation of proposals may be obtained by contacting the Laboratory at: Mount Desert Island Biological Lab P.O. Box 35 Salsbury Cove, ME 04672 or phone (207) 288-3605. Deadline for applications is 9 January.



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