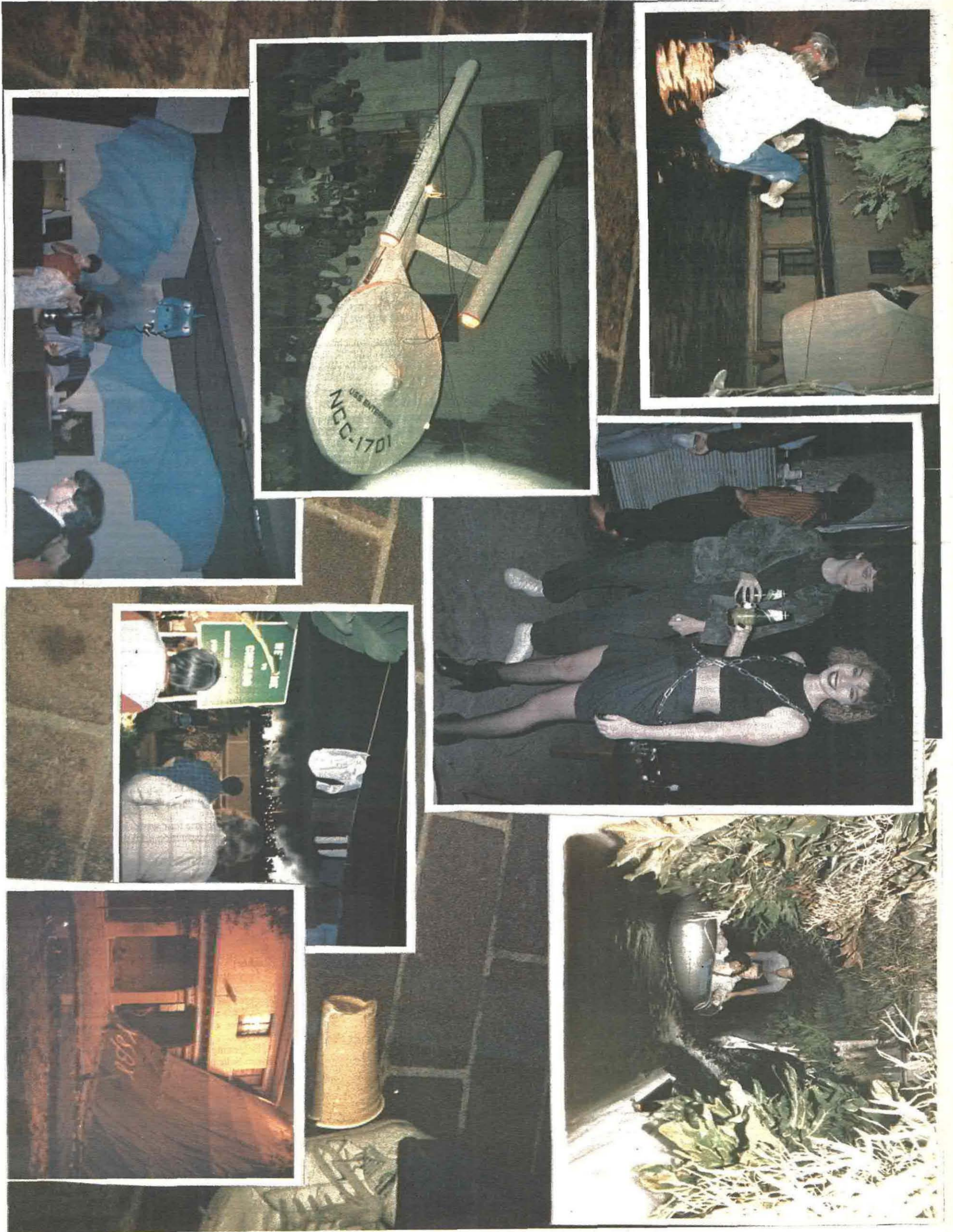


Caltech Interhouse 1986



Caltech Interhouse 1986

Ricketts:

"Avast, ye scurvy scum!"

Beginning with the theme of 'flood the courtyard,' Ricketts Hovse built a true pirate ship, complete with ocean, mast, plank, sail, cannon and galley.

"Andrew, Bob and I decided it would be fun to flood the courtyard, so we started telling people about it last year," Steve Waltman, flood coordinator, said. "Andrew and Bob weren't around at the Interhouse meeting, so somehow I got stuck in charge."

Although flooding the courtyard seemed relatively simple, problems did arise.

"We took the courtyard, and we took some water," Waltman said. "Some of it stayed there."

Nevertheless, the complications of this year's theme brought new enthusiasm to Ricketts' Interhouse.

"I don't believe it," junior Sam Weaver, Ricketts Hovse President, said the week before the event. "It's Monday, and we've already got people building Interhouse."

Dabney:

The Enterprise vs. Chernobyl?

True to their spirit of compromise, Dabney presented two themes, loosely tied by a number of concocted explanations.

"I think the basic idea is that Reagan's SDI program covertly diverted money to NBC executives to bribe them to force the Enterprise to destroy Chernobyl and cause a nuclear disaster in Russia," senior Dan Harrison said. "This was, of course, to improve the public image of the U.S. and destroy the public opinion of Russia. I'm sure that's not the only excuse you'll hear if you wander around here for a while tonight, but that's the one I like best."

Although Dabney takes Interhouse less seriously than some of the other houses, the Darbs still put in a substantial amount of work.

"I worked on the Enterprise—I papier-machéd about half a layer of it," freshman Elaine Lindelef said. "It was great—get all nice and gooky. People were throwing papier-maché stuff all over the place."

Interhouse generally provides diversion in both construction and appreciation stages.

"It's a lot of fun," freshman Erik Staats said. "I saw all the South Hovses and it's pretty amazing what they've done."

Fleming:

Cross the drawbridge into medieval Fleming Hovse, "where men are men, giants walk the earth, and the thundering herd is real."

Choosing a medieval theme to complement their play, "Fansomestein's Monster," Fleming built walls, a stage and two dragons.

"We're doing a parody of Frankenstein, which is called Fansomestein, because Al Fansome is a generic Flem, like John Q. Public is a generic person," senior Frank Vasquez, the director of the play, said. "What happens is he creates a monster, a SuperFlem. And since last year Harvey Mudd stole our cannon, the SuperFlem goes to get it back."

Although the Fleming play usually lasts almost an hour, the writers do not start from scratch, but instead incorporate the past year's events into the plot.

"The play always goes more or less off of things that have happened," Ken Gant, class of '83, said. "You just adapt the year's events to the year's theme and make it louder and funnier."

Building, however, requires more work.

"It's a castle wall, complete with working drawbridge and fourteen foot flames from the dragon's mouth," Mike Kilby, class of '83, said. "I pounded two nails. I didn't come back to work on Interhouse, I came back to see Interhouse and visit friends."

Lloyd:

Theme? What theme?

In a strange but workable combination of Mad Max and a futuristic space adventure (rivaling Dabney's Star Trek vs.

Chernobyl), Lloyd put together an atmosphere of barbarian high technology. A cardboard-covered golf cart running down Tropicalley became a space shuttle from the real world into the Inner City.

"We generally do something with this hall," sophomore Garrett Choi said. "Last year we had a bookstore and stuff like that."

The coordinator of Lloyd's Interhouse, freshman Ben Funk, disclaimed responsibility for the theme.

"The house decides on the theme really—it's a vote," Funk said. "I just organize a meeting and we put out ideas, and the house votes on the idea they like most."

Although most other houses have upperclassmen run Interhouse, Lloyd generally assigns the job to freshmen.

"It's a frosh job, and I was the only one who was willing to do it," Funk said about becoming coordinator. "No one else was stupid enough, that means. It's not the easiest job in the world. I also didn't realize how much work it was going to be."

Some upperclassmen, however, retain their enthusiasm about the work.

"I volunteered," Choi said. "You've got to volunteer for things like this. This is awesome."

Ruddock:

"I got de blues, de blues of Chicago..."

Ruddock House presented an interesting picture of life in Chicago, adding a difference to their normal 'dance' theme by choosing a band with period music.

"They just usually have a dance band," sophomore Munir Bhatti said. "This year we're going to have a kind of rock/blues band, so it'll be danceable."

Senior Chris Mihos, coordinator of the Ruddock Interhouse, took responsibility for choosing and getting the band.

"I like blues, and we've traditionally had semi-mainstream bands in the past," he said. "I wanted to do something a little more interesting."

The house started planning the theme four weeks before Interhouse, but didn't actually begin construction until the Thursday before the party.

"We really started all the push on Thursday night," Mihos said. "It was mostly deciding what to do and where we were going to put things on Thursday and Friday, then we spent Saturday trolling it out. We don't have as much construction as Page so we can afford to wait 'til the last minute."

Blacker:

Hieroglyphs, Cleopatra, pyramid, Sphinx and Aztec gods, all under the blazing yellow sun in Blacker's wet, sandy version of Egypt. Aztec gods?

"There's always been a Blacker Beach, so we decided to have a real Blacker Beach," sophomore Steve Lew said.

Beginning with 'sand' as their theme, Blacker Hovse built up an impressive scene.

"They're actually real hieroglyphs," senior Bengt Magnusson said. "We copied them from a book. It's some kind of hymn to Amon and Aten, Egyptian gods."

The evening culminated at about 12:45, when Ricketts Hovse flooded the Nile.

"Unfortunately we're not having mud-wrestling this year—that's Blacker's tradition," Magnusson said. "I guess we'll have mud-wrestling when Ricketts floods our courtyard."

Page:

Warning: Jungle, 30 feet. More jungle, 40 feet. Well, actually, jungle throughout Page House. Watch out for the monsters!

In their typical fashion, Page House members chose a ride which complemented their theme. Or was it the other way around?

"The reason Page has a ride every year is that it's the house's idea of a special attraction, that no other house has, to bring them to our party as opposed to everyone else's," senior John Beck said. "Once they get there, we figure that our house has enough charm or whatever to keep them there. But that's the initial spark."

Building the ride takes a great deal of talent and coordination.

"It's a mainly frosh effort," freshman Carver Farrow said. "And upperclassmen and the RA's lend their expertise."

The actual mechanics of the ride vary from year to year. This year, water and gravity provided the moving force.

"We have a thousand gallon per minute pump," sophomore John Bowers, ride coordinator, said. "Hopefully we'll have enough push. We got the pump from Stane Dewatering, free, which is pretty cool because normally they charge \$500 to rent that pump for a week."

Despite the cost of building the ride, Page does not charge admittance.

"Interhouse is not a money-making event," Bowers said. "We break even on the drinks."

Students Assaulted

Violence Mars Interhouse

by Jennifer Low and Steve Bard

The most violent Interhouse party in Caltech memory forced three undergrads to visit the Huntington Memorial Hospital. Robert Maher, Konstantin Othmer and Clark Highstrete were assaulted during the events of Saturday night.

Security reports show that the first major disruption was a fight in the Lloyd House courtyard around 11:30 p.m. The "shoving match," as termed by Chris Brennen, involved Caltech students and persons outside the Caltech Community. Jay Giezen asked the party to disperse and Caltech Security escorted the non-Techers off

campus.

Within the next half hour Page freshman Robert Maher was attacked from behind and stabbed twice in the back. Maher had just left the Page House party and was on his way to his room. Maher had to enter his room through his window because of the Page water ride. Maher was knocked unconscious between the Page courtyard and Winnett Center before he reached his room. There were no witnesses.

Maier noticed the wounds, two in the back and one at the scalp, while taking a shower. He and his roommate walked down to the Health Center and finding it closed, returned to the MOSH's Office. There, Bernie Santarsiero called the paramedics. Bernie and Cheryl Schmitt (Page R.A.) accompanied

Maier to the Huntington Hospital.

It is not clear as to whether the same individuals that were in Lloyd House earlier were also responsible for the incidents that occurred later.

Tension

After the incident, Cheryl Schmitt recalls there was a tension in Page House for a few hours. Lloyd House cancelled their ride following these incidents although Page House did not.

Security spent two hours after 11:30 warding off the "undesirable visitors," said Chris Brennen. At this point, Caltech Security tried to keep order on Caltech campus while Pasadena City Police patrolled the outside areas. Brennen remembers that there may have been as many as four or five police

units around campus.

During this chaotic period, Konstantin Othmer (Page, junior) and other Page students helped Security disperse some of the troublemakers, according to Brennen. Othmer remembers being hit on the head and was knocked unconscious near San Pasqual and Ruddock House. Again, there were no witnesses.

He was taken to the Ruddock R.A. suite and the paramedics were called. Amy Calloway (Ruddock R.A.) accompanied him to Huntington.

Clark Highstrete (Fleming, sophomore) was walking his girlfriend to her car on San Pasqual around 12:30. A young man who appeared to be "on something" approached the couple and made gestures indicating that he wanted

a fight. Clark demurred and received a punch in the mouth, which removed a tooth and split his lip. Clark's assailant ran off and Clark also made a trip to Huntington.

Trespassing problems occurred until 2AM with Brennen and Caltech Security fending off would-be invaders.

Contrary to popular belief, no one in Lloyd House suffered a heart attack.

A punk group of "skinheads" are rumored to have been responsible for much of the violence that went on. Brennen stresses, however, that there is "no clear link" between the incidents. Formal police reports are not yet available

"If it's reasonable to pursue charges... we'll do that," said

continued on page 11

THE CALIFORNIA TECH
Volume LXXXVIII • Number 9
21 November 1986

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Caltech Sub-Millimeter Observatory To Receive High-Altitude Dedication

[CNB]— A submillimeter-wave telescope that will enable astronomers to begin new explorations of the center of the Milky Way, distant galaxies, and the "stellar nurseries" in space where stars are born, will be dedicated on Saturday, November 22, by officials of Caltech, the National Science Foundation, and the University of Hawaii. The Caltech Submillimeter Observatory is expected to make major contributions to the understanding of the life cycle of stars and the evolution of galaxies.

Dedication ceremonies for the telescope will be held at the observatory site, 14,000 feet above sea level on Mauna Kea, Hawaii. The ceremony will include addresses by Caltech President Marvin L. Goldberger and observatory direc-

tor Thomas G. Phillips, professor of physics. Also attending will be representatives of the National Science Foundation, which provided primary funding for the project, and officials of the University of Hawaii, which has leased the Mauna Kea site to Caltech.

Funds for the observatory were also provided by the Kresge Foundation of Troy, Michigan, Francis L. Moseley of Flintridge, California, Prince Charitable Trusts of Chicago, and NASA.

Submillimeter and millimeter waves are emitted by such chemical compounds in space as carbon monoxide, ammonia, formaldehyde, and hydrogen cyanide. These compounds are found in gas throughout the cosmos, including galactic nuclei and in interstellar clouds, which are primary sites of

star formation in the Milky Way and other galaxies. Interstellar dust absorbs the visible light from these clouds and prevents astronomers from studying them with optical telescopes.

The Caltech submillimeter-wave telescope will also be used to investigate compounds that emit radiation only in the submillimeter range of the spectrum, including hydrides of magnesium, calcium, aluminum, and silicon. These chemicals are abundant in the remnants of the molecular clouds that surround newborn stars, and their study is expected to provide new insights into the mechanisms that trigger star formation and determine the rate at which it takes place.

"Star formation is a key to processes occurring throughout the universe, from the formation of the spiral arms of galaxies to the birth of planetary systems such as the solar system," said Dr. Phillips. "The submillimeter portion of the spectrum yields the best probes of the physical and chemical conditions in molecular clouds, and may finally permit us to observe how an interstellar cloud actually collapses to form a protostar. We believe it

is this stage that determines whether a star becomes a single or binary stellar system or—like the sun—acquires a family of planets."

According to Dr. Phillips, the telescope could also shed light on the dynamics of "starburst" galaxies—extremely luminous galaxies that appear to be undergoing rapid bursts of star formation in their central regions and along their spiral arms. "The submillimeter-wave band is ideally suited to studying emissions from these sources, many of which exist at great cosmological distances from earth," he stated. "Because their radiation has taken billions of years to reach us, we could be witnessing galaxies that are undergoing the first phase of star formation in their creation."

The new telescope consists of a 10.4 meter (34-foot) radio dish with extremely high surface accuracy, designed and constructed by Dr. Robert Leighton, the William L. Valentine Professor of Physics, Emeritus, at Caltech. Its instruments include a new generation of receivers with the sensitivity to make very fine distinctions among the various emission lines

continued on page 8

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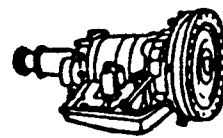
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LETTERS

Clothes Needed

To the Editors:

I am writing a few lines to see if you can help me. I am poor & live way back in the hills. Wondering [if you] have any used clothing or household items. I have a girl 7 years old. She goes to school and she needs warm clothes to wear [to] school. And she's been [a] sickly kid all her life, been in and out of hospital. She's been operated on for cancer and we just live on food stamps. We have no income to buy kids anything since been born. And they always talk about 'nother child at school, some else got something I did this Christmas. That really hurts. I have a girl 4 years old, and I am 4 months pregnant. I need baby clothes. Here 7 years old girl sizes: pants 8, blouse 8, shoes 2. 4 years old: pants 6, blouse 6, shoes 12. Husband: pants 38.29, shirts 17½ or large, shoes 10½. [For me] dress 18, pants 18, shoes 7½. A few dollars would be appreciated. What we can't wear I will give to someone else.

May god bless,

—Edith Caldwell
H.C. 80, Box 220
Hilton, KY 40840

Truth Distorted

To the Editors:

Maneesh Jain's article in the last Tech is a paragon of how skillful use of language can distort the truth, so much so that it can give the impression very opposite of what it really means. Mr. Jain, writing about the proposed sale of AWACS to Pakistan, described the Pakistani and Indian governments as two "mutually suspicious governments." On the contrary, the facts indicate that this is not the case; Pakistan's government has been making a very solemn effort to normalize its relations with India. To quote the President of Pakistan directly, "Pakistan's policy of normalization with India has been consistent and steadfast. It is so because it is founded on objective realities and because tension-free relations with India will promote an environment of peace and stability in the region which serves the best interest of both the nations."

In the context of incursions in Pakistan by Afghan planes, Mr. Jain has tried to give the impression that the 600 or so violations of Pakistan's Air space this year, which have caused the death of several innocent civilians and heavy loss of property, is an "innocuous" act. It seems that Mr. Jain has no sense of humanity and no respect for the opinion of the civilized world which has condemned these incursions several times in the United Nations. I would seriously like to know what is "innocuous" to Mr. Jain's sense of humanity. This query is all the more important, considering that Mr. Jain wrote this article through

"The Outside World," a forum of "Society to Reduce International Violence on Earth."

Mr. Jain further tries to suggest that the sale of early-warning radar planes would "improve Pakistan's offensive capability." This suggestion is ridiculous in two ways. First, AWACS cannot be used for anything else except for early detection of intruding enemy aircraft. Second, considering the regional arms level build-up, i.e., the military strength of the U.S.S.R., India, and Afghanistan, all three possessing the Soviet equivalent of the latest weaponry along with fully functioning plants for the manufacture of these "instruments of war," Pakistan's inventory of armaments is quite insignificant.

In conclusion, let me say that through this column in the Tech we do not want any distorted news about the "Outside World."

—Amin Abid
and Khuram Afridi

Explore Space!

To the Caltech Community:

I am pleased to announce that a Chapter of the Students for the Exploration and Development of Space (SEDS) has been formed on our campus. SEDS is an international organization founded by and for students who share a common interest in human space activities. The first Chapters of SEDS were created on the MIT and Princeton University campuses in 1980, and I encourage interested individuals to join in our chapter here.

SEDS Chapter activities will include regular presentations, films and discussions on past, present and future activities in space exploration and development. Trips to JPL, Mount Palomar and Edwards Air Force Base (to watch the shuttle landings) may be planned, and a campus delegation to attend

the SEDS International Conference will be put together for our participation there in Boston, MA, this coming July.

You don't have to be an aeronautical engineer to be involved in SEDS. Members of this group come from all academic backgrounds—it's becoming clear that space will be an increasingly important part of all our lives in the future. SEDS has several major programs, including space scholarships, career guidance, research grants and internships. SEDS also presents the Arthur C. Clarke Award for Space Education each year to an individual for outstanding personal contributions in education towards the peaceful uses of outer space. SEDS's affiliates include the American Astronautical Society, the Space Studies Institute and the Young Astronaut Program.

You can play a significant role in teaching yourself and other students about space by becoming an active member of our Chapter. I welcome everyone to join us at our next meeting, on Wednesday, December 3rd. We are presently planning on having either a short film or a presentation on some aspect of the space program.

I hope you will join with other students on our campus who are interested in knowing more about human activities and future in space.

Sincerely,
—Irwin Horowitz

Italian Pen-Pal

To the Editors:

I am an Italian freshman electronics engineering student enrolled at the University of Bologna, Italy.

I would like to correspond with some students enrolled in the same course of study as mine or in similar ones.

I know how to talk and to write English in a pretty good way because I spent my senior year of high school in a New Jersey high school.

Sincerely,
—Marco Fava
v.g. Bolognesi, 5
I-42100 Reggio Emilia
Italy

Half-Truths

To The Editors:

Two weeks ago Hasok Chang and Jens Peter Alfke wrote in response to what I had written. I think they misinterpreted certain points that I made, but I really respect their opinions anyway.

But joking aside, the first thing I saw, in BIG letters, was "I don't see why calling President Reagan 'un-American' is anti-American." No no no, I had used the word "anti-America," which is much more serious. Name-calling words like "un-American" and "anti-American" don't mean much. I had used "anti-America," and I backed it up by quoting Dr. Bayer's negative (destructive) views on the American President, American press, American capitalism, and American foreign policies as well as his positive opinions about Marxism (which contradicts American ideals.) Note also that in Mr. Alfke's letter, I was directly misquoted; I supposedly disapproved of Dr. Bayer's "un-Americanism."

Hasok also said that, according to me, "criticizing the very system that gives the right to criticize does injustice to the system." The quote is correct but incomplete. My major complaint against people like Dr. Bayer isn't that they criticize, but that they use loud speakers when criticizing the U.S., but don't even whisper when it comes to

criticizing the really bad governments.

Sometimes they pull the Soviets up to the level of the U.S., and sometimes they push the U.S. down to the level of the Soviets (as Dr. Bayer did, with despicable comments about commissars in the White House.) But even if they think the U.S. is so wretched, why do they have to compare the U.S. to the Soviets when the two countries are morally incomparable?

Concerning Mr. Alfke's letter, he seems to think that I won't defend the rights of those whom I disagree with. He also says that I never explicitly mentioned, but perhaps secretly want to, outlaw "improper" actions.

He is absolutely correct in one sense, because I would never defend a Nazi's right on moral grounds, and I don't think he would either. But I would acknowledge their legal right to march (as the courts did). After all, how can you legally distinguish a Nazi marching with a sign reading, "Jews go back into the oven" from a Boy Scout helping an old lady across the street? You can't! The law doesn't (and shouldn't) make such moral distinctions, and that's why people should.

I think that I was a bit ambiguous in what I meant by "moral" and "immoral." Something "immoral" harms people, something "moral" helps people, and something "amoral" doesn't do anything. A moral action would be to help an old lady cross the street. An amoral action would be watching TV all day. And immoral would describe communists and fascists.

Morality shouldn't be confused with holiness. For example, homosexual acts are unholy (argue with the nearest clergyman, not me). But they aren't immoral, because consenting homosexuality

continued on page 6

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ENTERTAINMENT

Museum Scene: Pre-Columbian Artworks

by Bengt Magnusson

Last Friday I attended a preview of the upcoming exhibition, "Colombia before Columbus," at the Bowers Museum. Most people invited to the preview were, of course, the major money donors, but then there were a few of us "media people." I guess I felt a little like a cat among the ermines, but I had a lot of fun just watching this sub-species of *homo sapiens*, homo richus (with seven-digit annual incomes) and how its members behave.

Especially amazing were the things rich people would dress up in—that was an exhibition all in itself. Together with the plastic surgery and the way people tried to be seen by others, ignoring the art they supposedly came for, I realized that the world of *Brazil* isn't that far away after all.

I digress. I was there for the art, and that's what I'll talk about. Bowers Museum is largely devoted to showing art of historical and/or ethnographic interest, and their

newest show is about Colombian pottery before the European rediscovery of America. The pieces on display range in age from about 500 years old to almost 3000 years old.

It is interesting to see how much character this art has, and how clearly it sets itself apart from other cultures. Just as it is fairly easy to recognize a piece of African art as being from Africa, it is, after seeing this show, equally easy to identify the more typical Colombian artworks. Even the oldest of the pieces have several features in common with the newer ones.

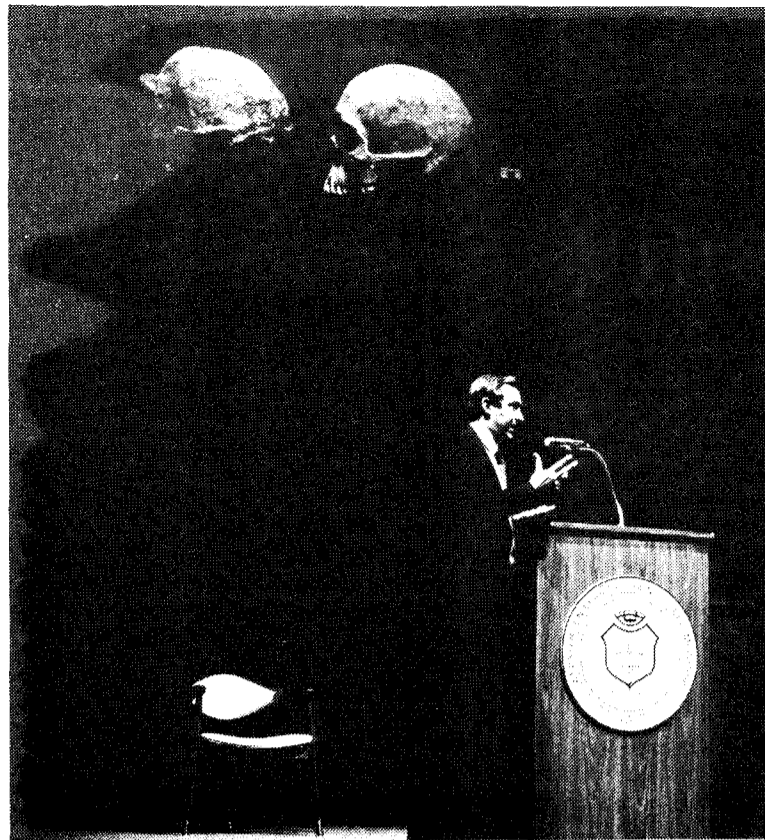
Many of the objects show the kind of practical artistry one often sees in African pieces: ordinary household items are decorated and embellished until they become just as much objects of art as practical objects. Burial urns, amphoras, bottles, boxes and flutes are just some examples. Some have abstract geometrical patterns that were cut into the soft clay before burning, others have human

figures. Sometimes both occur: human figures with patterns on their bodies, the patterns representing body tattoos.

Most of the time the sculpting is minimalistic, the artist only indicating the features he considered most important. In a few instances, though, the artist seemed to go overboard: incredibly complex sculpting even on the inside and the bottom of vessels. In those cases, the objects were probably used for ceremonial purposes. The objects were seldom painted, it seems, even though it is hard to estimate how well potential coloring would survive being buried in the dirt for more than 500 years. Some of them do show colors other than the reddish-brown natural color of the ceramics, though; mostly red, black, and some white. (The same color patterns seem common to all known human societies: black and white are known to all cultures. Then comes red, blue, yellow, and green. Blue never occurs before red—if a society uses blue, they also use red.)

One special kind of sculpture that must be mentioned is the so-called "slab-figure." They are statues (of no practical purpose) of humans, with extremely simplified features. The body and head are made out of roughly rectangular, thin slabs of clay. The artist indicates eyes and mouth with only narrow slits, but compensates by giving the figure a prominent nose. Despite this simplification, you can immediately tell that it is a human face that is modeled. The figures radiate a kind of robust power not found in many works of art, and I would not hesitate to rule these "slab figures" as best in show.

"Colombia before Columbus" is the first exhibition in the U.S. to show in any great amount the ceramic artistry of the Indians in northern South America. The Bowers Museum also has a large permanent collection of various items, including some good African works. The museum is located at 20002 N. Main St. in Santa Ana, just a few blocks off the Main exit from the I-5.



Paleontologist Richard Leakey gave a talk much like this one last Monday.

Photo courtesy of Royce Carlton Inc.

Leakey's Fossil Finds

by Astrid Golomb

Last Monday night, November 10, Richard Leakey—fossil finder extraordinaire—spoke to a capacity crowd in Beckman Auditorium, introducing astonishing material recently found in the African Rift Valley. The Alan O'Brien Memorial Lecture was given in memory of the first president of the Caltech-based Leakey Foundation.

The most remarkable things discussed in this amazing talk were the idea that man has not yet diverged from the apes, that *Homo erectus* and *Homo sapiens* should not be classified as different species, and that the Australopithecines are not ancestral to man, nor even ancestral to each other, but rather constitute separate and contemporary populations. Leakey also discussed five new fossil finds: a *Homo sapiens* from Eli Springs west of Lake Turkana dated to 130,000 years; an almost complete proconsul skeleton; a new sub-family of Miocene apes of which two specimens have been found, one at a site called Lake Buller and the other west of Lake Turkana near a main road; the Black Skull, found by Alan Walker, an *Australopithecus bosei* skull just over 2.5 million years old which looks similar to a 1.5 million year old specimen of the same type and almost identical to the back half of the famous "Lucy" skull, thereby casting doubt as to whether the front and back of that famous fossil skull indeed came from the same head; and lastly, the twelve year old boy *Homo erectus* dating from 1.6 million years ago, which is clearly a human skeleton and stands 5'6" tall.

Richard Leakey was born in Kenya and raised as an African. He has excavated at sites east and west of Lake Turkana, in the Omo Valley at Lake Natron and on the Borengo River. In his autobiography, *One Life*, we learn that while other kids were figuring out if they could borrow a car for the prom Richard was chasing rhinos

on horseback, capturing lions and letting them go, and even catching himself in a snare he had set to catch a cheetah. His medical history is as remarkable as his professional one. He has had blood poisoning, malaria, bulhrazia, been bitten by a puff adder and had a kidney transplant. He is director of the National Museum of Kenya, a fellow of the Royal Anthropological Institute and of the American Association for the Advancement of Science. He has two honorary doctorates and probably a high school diploma. He is a co-author with Alan Walker of *Origins, People of the Lake*, and *The Making of Mankind*.

Mr. Leakey said he is often told by people that they are amazed there are so few fossils. He replies that he is more surprised that there are any fossils than that there are so few. "People forget that to become a fossil is a very difficult thing." Before a bone can become a fossil, it must first escape predators and malign surface conditions, surviving long enough to be buried in sediment, where, provided the soil is not too acid, it may reside for many years. Then, to be discovered, it must make it to the surface and be found within a few years, before wind and weather turn it back into dust. This is so improbable an occurrence that it is amazing any fossils have been found at all.

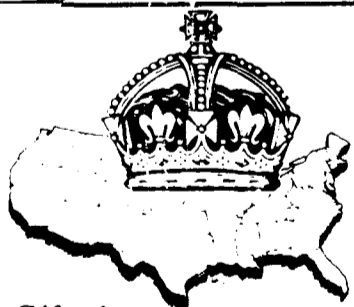
It used to be conventional wisdom that all the proto-hominid bones would fill a dining room table. Leakey claims that now the table would have to be larger than any he has ever seen. Now we have several almost complete skeletons, as well as skulls, jaws, and bits from more than 1,000 individuals. Despite this conglomeration, we still lack a complete picture. Variation within the species makes drawing a 'typical' species member difficult, although modern humans are much more variable than we believe our fossil ancestors were.

continued on page 8

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ENTERTAINMENT

Book Review:

Journey Into Night

by Huy Cao

"I was twelve. I believed profoundly." So goes Elie Wiesel's description of his former self, before the Holocaust. Mr. Wiesel, the 1986 Nobel Peace Prize winner, has written many books on the Holocaust which, as he says, has turned his life into "one long night." His first book is accordingly entitled *Night*.

He first tells of how the Jews of his ghetto didn't want to believe what they heard about the murdering of their people. One Jew escaped to tell what happened to him, about how the Gestapo had driven Jews into a forest, made them dig their own graves, and slaughtered them. He tells of babies being thrown into the air for machine gun target practice. But nobody believes him. "What an imagination. Poor fellow. He's gone mad," everybody says.

Spring 1944. Germany will be defeated within months or perhaps weeks, the Jews hope. But before they see the end of the war, the Jews are gathered by the Hungarian police.

The police pack the Jews into

a "cattle wagon" to send them to Auschwitz. On the way there a woman becomes insane and yells about fires, flames, furnaces; the other Jews, still miraculously sane, try to shut her up, but ironically she is more sane in her perceptions than they. The Jews arrive at Auschwitz, see flames, smell the odor of burning flesh, and lose their illusions at last.

An SS officer tells them, "You'd have done better to have hanged yourselves where you were than to come here. Didn't you know what was in store for you at Auschwitz?" He tells them furiously, "Do you see those flames? Over there—that's where you're going to be taken. That's your grave, over there. Haven't you realized it yet? You dumb bastards, don't you understand anything? You're going to be burned. Frizzled away. Turned into ashes."

Not quite. While some immediately have that fate, others like Elie Wiesel and his father die slowly, laboring to death. They stay close together so as not to be separated, and they look out for

each other so they can avoid the "selection." The rest of the novel tells about how they struggle for survival, sometimes at the expense of other Jews.

Night is written as a novel, but it isn't fiction. Wiesel's experiences aren't fiction, and the Holocaust certainly isn't fiction either. Rather, the novel format fits Wiesel's distinctive prose well and adds more impact to the telling of his experiences.

The book isn't really about one person's experience with the Holocaust, although it does give lots of details of atrocities by the Nazis. Rather, it is about a boy if fifteen who discovers absolute evil, who goes from believing profoundly to having extreme doubts. At one point, when a child is hanged by the SS, the narrator hears somebody behind him ask, "Where is God now?" He hears within himself the answer: "Here He is—He has been hanged here, on these gallows."

Books about the Holocaust tell much about the nature of both victims and their torturers. Mr. Wiesel is very honest about relating both the good and bad things he felt while he was a victim. So if you're a bit puzzled about human nature, this book might clear things up a little bit, or it might even make you more confused!

Hill and Wang published the book in 1961. A copy of *Night* is in Millikan.

Leakey

from page 5

Moreover, within the fossil record there is a gap of several million years where there are virtually no fossils.

Nevertheless, fossils provide a great deal of information about our past. "The greatest and the fundamental difference between man and his predecessors is that we stand upright using our lower limbs for support and therefore have our hands free from the job of locomotion," Leakey said.

Ever since Darwin first popularized the notion that we were related to the apes and could find our ancestors in Africa this idea of this special close relationship between man and ape has bothered people. In fact, we now know from gene sequencing that man is genetically closer to chimpanzees than horses are to donkeys.

"Horses and donkeys can mate and produce issue," Leakey said. "I wonder if in fact chimps and man have done this. If someone were to ask me if I knew of any such occurrence, I would have to say 'No.' But if there were such an occurrence would I necessarily know?"

"I don't know. But this tells us more about man than about chimps."

A new find from a site called Eli Springs on the west side of Lake Turkana is a skull very like modern man's, *Homo sapiens*, but thick and large. It is incomplete and has been dated by C-14 to approximately 130,000 years old (It will probably be published in the December issue of *The American Journal of Physical Anthropology*.) *Homo sapiens* by this date has been found in Europe, Asia and the Far East, as well as Africa. "This individual could have joined us here this evening without causing undue alarm or despondency," Leakey said. "People have suggested that Neanderthals and Cromagnons are not 'human.' I strongly disagree."

Many people wonder when we split from the apes. Leakey doesn't. "I don't think we have yet," he said.

"Had the taxonomy of apes been devised by other than an interested party, it would have been done quite differently."

Were our earliest ancestors knuckle walkers, brachiators who swing by their upper limbs through trees, pre-brachiators (all now extinct), or quadrupeds who run on all fours on the ground or on top of branches? Although we do not yet know this answer, either, we have some evidence about the tendency of two-legged primates to be arboreal. West of Lake Turkana in Kenya there are people who spend a lot of time in trees called *Salvadora* bushes, trees with thin and spindly branches. One would conclude these people were arboreal if one watched them; they spend ten hours each per day in the trees getting the fruit, which is rich in sugar. Only the children manage to do this, however, because adults fall through the branches.

Leakey believes bipedalism is an adaptation to the advent of savannah covered with smaller shrubs. It is clear that bipedalism was an adaptation to a change of the geography to savannah, which could go back eight or nine million years. Savannah adaptations occur in other species at that time.

Technology seems to Leakey to be important to the success of our ancestors. Reasonably elaborate tools with many flakes removed, which may tell us something about the mind's development, have been found dating back 1.3 to 1.4 million years. The ape who makes a tool must see it in the rock before he begins. Simple tools date back 2.3 million years. An endocast of a 1.5 million year old *Homo erectus* skull (a rubber impression taken inside the cranium) shows us the size and distribution of major blood vessels which can be compared to a modern human brain and to those of non-human primates. Human-shaped brains, as opposed to ones that are merely of human size, go back about 2 million years, or to about the time of the first tools.

Transcripts of the talk are available from the Leakey Foundation.

Telescope

from page 3

in the submillimeter-wavelength range, as well as very high-sensitivity bolometer detectors for continuum studies. The telescope will have the unprecedented capacity to detect radiation of wavelengths ranging from one millimeter down to 300 micrometers (one-eightieth of an inch).

Mauna Kea, one of the highest and driest observatory sites in the world, was chosen because atmospheric water vapor attenuates submillimeter waves from space. The location also provides an excellent view of the galactic center, now known to harbor a powerful energy source that may mark the presence of a black hole.

To protect the telescope from exposure to the wind and snow on Mauna Kea, an observatory dome has been constructed with support from the NSF. The dome has two novel design features—large, lightweight doors that slide back to expose the entire radio dish to the sky, and an internal wall and floor structure housing the controls, data collection, and support systems for the telescope.

Mauna Kea, an extinct volcano, is one of the world's most active observatory sites. Five additional optical/infrared telescopes are in operation there—one belonging to Canada, France, and Hawaii, two to the United Kingdom, one to NASA, and one to the University of Hawaii.

Mauna Kea is also the designated site of the world's largest optical telescope, the W. M. Keck observatory, currently under construction by the California Association for Research in Astronomy, a joint venture of Caltech and the University of California. The Keck Telescope is scheduled for completion in 1991.



The Inside World

Blacker: This was a fun week. What a fun week. I mean, BOY, what a fun week! It all started out with a couple of innocent drinks—some milk shakes here, some Zoo juice there. No one would ever think it would lead to the shameful menage a trois of Ted "get 'em in the front" Rogers, Dave "bite 'em in the rear" Cole, and Nancy "lovin' every minute of it" Drew. Dave "he looks like a girl in those red tights of his" Cole did not get any better with time, but remained sprawled out on the banks of the Nile until it overflowed. But the scandal didn't end there: the next morning, Shubbery was caught steam-cleaning the carpet. By the way, who wears the pants in Tracy's room? Could it be Brad "Flaming Fleke"?

Enough of that drivel, Arex.

Time for the real story. Picture two weeks ago: a certain frosh, trolling away the late night hours under the glare of her desk lamp, reaches up for her Tommy's from her bookshelf. Accidentally she grabs the Necromonicon, those 99 damned pages written by the Mad Arab Abdul Alhazred, and begins to read. Unaware of what was happening, she failed to notice the presence forming in the darkness behind her. SATAN was being summoned from the lower levels of Hell. The three exorcists smelled the brimstone but were caught off guard (being too subtle even for themselves) and were unable to halt the invocation.

Present day: For the past two weeks, the exorcists have been valiantly fighting, but the evil was spreading like cancer, and they were slowly losing ground. But NOW a secret weapon has been discovered. While it is still in the experimental phase and is not fail-safe, the Cosmic Slug (blazing a trail of slime wherever it goes) may be able to not only stop SATAN dead in his tracks but also purge him like an enema in the ritual of fire. WE shall not tolerate unholy presences of any sort.

—Betsy the Frosh

PS. Attention all music lovers: if you need a "KC and the Sunshine Band" fix, shake your booty and get down to Room 21. You'll find it in Dave Cole's record collection right next to Barry Manilow's Greatest Hits.

Lloyd: We were eating a box of Cracker Jack when we found this interesting puzzle, entitled "Which House Wrote This?"

① The executives of *** Corp had their semi-annual fiscal policy meeting Wednesday. Discussion centered around the sale of certain undisclosed commodities, with a 3/5 marginal profit gain to help renovate the hot tub for the "Love Triangle."

—B. the Frosh

② Everything's a great success, and we're all happy people. Alley 3 beat Alley 4 in the Whipped Cream and Stereo challenge. Alley 1 came out ahead of Alleys 5 and 6 in the Side Order of Fries challenge, and Alley 7 was the clear victor in the Highest Alley Number contest.

—Bets the Frosh

③ The Big *** Machine rolled over Page House, which sucks. Page sux sux sux; it is a dirty scummy house. The Tech Editors suck too.

—Betty the Frosh

④ The Gödly Studs of *** House were cheated out of a sure victory over the Red Faggots. Rumor has it that while they still have the trophy for now, Ed still can't get it up, right Ed?

—Barney the Frosh

⑤ Oooh the other Inside Worlds are so lame! Good thing this column never bothers anyone in the house! Drink of the week is the Coke, 'cause we make a lot of noise but we don't drink much.

—Buford the Frosh

⑥ The Church and Hovse of ****, the two being one and inseparable, have managed to divert the flow of space and time; now Cleopatra can go shopping, but does N.D. have to weave baskets for the rest of her life?

—Benny the Frosh

⑦ The willowy winds of winter sweep my fluffy essence forth over the dew-covered trees to the land of enchanted fairies. The smell of Drop Day hangs ever so pleasantly, as wispy wenchens wheeze and moan.

—Bessie the Frosh

Surprising, what you can find in a Cracker Jack box.

—Enos Jethro & Skeeter

Page: Well, it looks like the hope for an undefeated interhouse season is down the tubes for our little red friends across the way. First they lost to us. Then they lost to the Lloydies and slimed into a tie. Maybe they can handle Blacker.

Ol' Bullseye keeps his nickname. This time it's for his success as a target... not as the shooter. Other weekend wounded include Larry and the Barbarian. "F-follow him Konstantin!"

This week's world record: Interhouse was cleaned up quicker than it was put together. But Chicken and Jesus still have to get the smell out of the carpet. Death to the Nazi-Skinhead-Punk-Rockers. And, for the last time, "Fleming can't pull no bitches."

—Pervis

Ricketts: Riding the crest of the wave of euphoria from the most interesting Interhouse in the history of the known universe, Ricketts kept in step with tradition and was back to normal by Sunday. (Where's our keg?) Amidst bickering, backbiting, and general irritation, a Kryptonite lock was sacrificed to the gods of LN, and Thor in an attempt to teach those damn Blacker Moles to wipe their feet. Of course, the gods are deaf. And now for some real obscurity: rumor has it that the cosmic slug has risen from the ashes and headed into the great Swamp—evil beware!

The frosh need to figure out how to shower, and how to find 'Drew's room, the brakedrum needs to be rung, and Page needs a leader, or at least a brain transfusion. Mark Porter hasn't eaten in the last week, due to the hovse candy shortage, so **pay your hovse bill!**

—Shithead #1 and Giggles

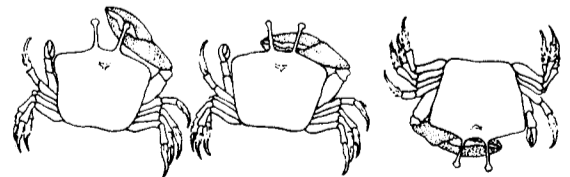
Ruddock!: It rained!!!

Interhouse went off way whippin' awesome. The bar was crowded, Hammersmith was great and nothing could beat Biff's finger-lickin' good ribs. Congrats, Hos! Congrats, Ruddock!

Soccer today vs. Blacker, and Disco soccer Sunday vs. Fleming. Ruddock defeated Dabney 3-2 Tuesday starting three new goalies... Fleming beware of JoeFria starting in a new position Sunday.

Social event this weekend is Bowling on Saturday. Social event next weekend is Thanksgiving. Countdown 5 days, 8 hours, 0 min, 9 seconds.

—Betsy the Frosh



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AIDS Awareness— A History of the Disease, and Prevention Guidelines

by Bruce Kahl

[Second in a series]

In my last article two weeks ago I talked a bit about AIDS and its demographics especially as the disease may affect the Caltech student population. In this article I would like to describe some of the history of the AIDS epidemic, its cause and prevention.

In April, 1981, Dr. Michalek Gottlieb of U.C.L.A. medical center reported the discovery of a new illness that appeared to severely weaken the immune systems of four men he had treated, leaving them subject to a number of lethal infections. All four men were homosexual, as were those in New York City and San Francisco who also were simultaneously reported to be developing the disease. The illness was therefore called "Gay-Related Immune Deficiency Syndrome," or GRIDS, for the short time it took to discover that not only gay males were its victims: soon the disease was seen to occur in

certain Haitians, hemophilia patients and intravenous drug abusers, as well as female sex partners of men in the above categories, and children born of infected females. The illness was renamed AIDS, for Acquired Immune Deficiency Syndrome, and a small flurry of lightly-funded research begun to further understand the condition. Twenty-five hundred deaths later, almost two years to the day from the original Gottlieb report, U.S. Health Secretary Margaret Heckler announced the discovery of the probable cause of the disease, a virus discovered in Paris by Dr. Luc Montagnier and named lymphadenopathy virus, or LAV; in the U.S. Dr. Robert Gallo of the National Institutes of Health almost simultaneously discovered the same virus and named it HTLV-III, or Human T-Lymphotropic Virus Type III. The discoveries were highly significant since they offered hope for an antibody test which could screen

blood for infection before it was used in transfusions; this, indeed, was discovered in 1984. Unfortunately close to nothing has been developed which effectively eliminates the virus from an infected host; since the first (retrospectively determined) cases of AIDS in the United States were counted in 1979 (11 cases) there have been 26,875 total cases of AIDS of which 15,070 (approximately 56) are dead. This number does not include the number of cases of ARC, or AIDS-Related Conditions, which are thought to total between 100,000 and 200,000; individuals with this diagnosis have been infected with the virus (now called HIV, or Human Immunodeficiency Virus) but do not fit the strict CDC (Centers for Disease Control) criteria for the formal diagnosis of AIDS. Nonetheless many of them may die of the complications of HIC infection without ever getting the AIDS label. As many as 50% of these individuals may go on to "full-blown AIDS." And many more individuals have been infected with the virus and not yet begun to show symptoms at all.

Just what does HIV do that renders it so deadly? Its primary damage is to the immune system: its "secret weapon" is to invade lymphocytes (T-cells) and macrophages which normally play a crucial role in rendering infecting viruses and bacteria non-toxic. T-cells serve as a modulating/guidance system in directing other lymphocytes—B-cells—to attack and destroy invading virus and then to call off the attack when the enemy is vanquished. Without the T-cell system in place the host is subject to infection by a myriad of so-called opportunistic organisms, such as *Pneumocystis carinii*, a parasite which causes a deadly pneumonia, or *Myobacterium avium*, an organism which causes a TB-like syndrome but for which there is no treatment. Other results of the immune system damage include susceptibility to a rare form of cancer, Kaposi's Sarcoma, or other

cancers such as lymphoma. The virus also seems to have a predilection for neural tissue and causes a myriad of neurologic conditions, from peripheral neuropathy (numbing sensation in the extremities) to encephalitis (inflammation of the brain.) Clearly this virus is extraordinarily destructive to humans and with no markedly effective and safe treatment yet on the scene the only protection against its effects is not to "catch" it.

The key to not "catching" the HIV is to recall that the virus is transmitted through semen and its interchange between humans. Any activity which causes such an interchange places the receiving individual at risk of infection. And obviously avoidance of such activities lowers or eliminates the risk. There are also documented cases of female-to-male transmission via penile-vaginal intercourse, suggesting vaginal secretions can play a transporter role. I must also also reiterate that AIDS is not a "gay disease;" the number of drug- and non-drug-related heterosexual cases in this country is increasing steadily and in certain other countries (Haiti, Zaire, Uganda) the majority of cases are heterosexual. The virus is deadly but not very contagious—though it has been recovered in saliva in small numbers there are no documented cases of infection caused by saliva exchange. Apparently a large dose of the virus—such as that in a typical seminal ejaculation—is necessary for infection, plus contact with blood of the host-to-be. This usually occurs via minute tears in the lining of the vagina or the rectum. The sole protection we have against infection via the sexual route is the practice of so-called "safe sex," i.e., following sexual guidelines which eliminate the exchange of semen and/or blood (including menstrual blood.)

Safe Sex Guidelines follow; they apply to men and women regardless of sexual orientation.

SAFE

- Mutual Masturbation
- Light kissing
- Body massage
- Hugging
- Body-to-body rubbing (frottage)
- Light S&M (sadism/masochism) activities (without bruising or bleeding)
- Using one's own sex toys
- Showering or bathing together
- Fantasies—verbal or visual

POSSIBLY SAFE

- Deeper kissing
- Anal intercourse with condoms
- Vaginal intercourse with condoms
- Fellatio interruptus (oral-penile stopping before climax)
- Cunnilingus (oral/vaginal contact)
- Urine contact ("water sports") on intact skin

UNSAFE

- Anal intercourse without condoms
- Vaginal intercourse without condoms
- Manual/anal intercourse (fisting)
- Oral/anal contact (rimming)
- Shared sex toys.

I have borrowed the above list from the American College Health Association special report on AIDS. I would only add that although synthetic condoms have been demonstrated to block passage of the virus in the laboratory they are notorious for breaking and probably this fact is responsible for the 10% pregnancy rate when condom-only (no spermicide) birth control is used. 10% odds are not desirable for most people when the price is life. The ultimate protection in this complicated situation is for each person to know his or her partner well enough to be able to ask about sexual history so a more informed decision can be made regarding the kind of sexual activity he or she will engage in. To quote again from the ACHA report: "In many ways, it is more meaningful to think in terms of high-risk activities rather than of high-risk groups. There is nothing inevitable about being gay in terms of AIDS risk; whether one is gay or straight, certain activities are risky. For example, unsafe sexual intercourse with an unknown partner creates risk for anyone. On the other hand, safe sex reduces risk for anyone—gay or straight.

Next time: testing for the HIV antibody—should you have the test?; description of some of the more common symptoms of AIDS, ARC, and HIV infection, plus experimental treatments that have been tried or are currently being investigated. If you have any questions about AIDS call the Caltech Health Center, x6393, and ask for either Lori Mulvaney or Bruce Kahl.

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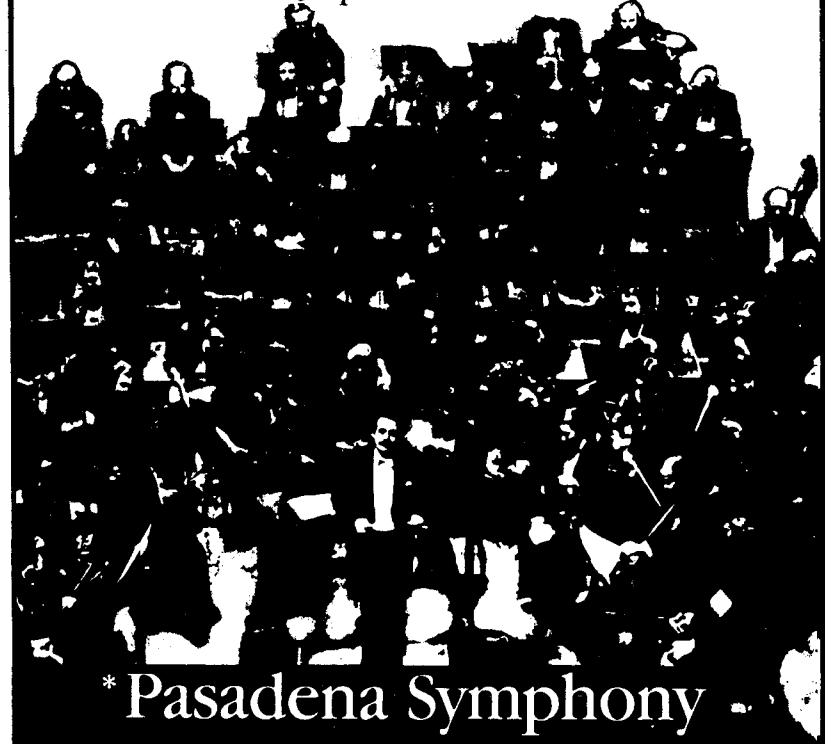
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SPORTS

Harriers Run in Regional Meet

by Speed Demon

This year the NCAA Division III Cross Country Regionals were held on the scenic campus of UCSD. And while the sights were breathtaking, the challenging race courses were even more so. A killer of a hill during the first mile set the tone for the whole race.

The Men's Race

The men's race began at 11:00AM under a bright sun and clear sky with clean air (for a change). What more could you ask for?

Many of the competitors went blasting off into the sunset only to blow up on the hill, but not the Caltech team. We were far too intelligent to make that mistake. Our instructions were to hang back during the first mile and to attack the course aggressively after we cleared that hill.

Seems as though that strategy paid off nicely. John Gehring made his way from 40th place at the 2-mile point to 23rd place at the end, finishing strongly in 27:33. Gehring improved his placing from 37th one year ago at Regionals.

In addition, Mike Jensen and John Beck both ran their best times of the season when it counted the most, completing the eight-kilometer course in 28:39 and 29:38 respectively. Chuck Lee was closing fast in 29:55 with Darin Acosta on his heels in 30:16 to round out the scoring.

Sophomores Alex Athanasopoulos and Ray Hu got their first taste of top flight competition in San Diego and ran cautious races. Alex's time of 30:38 and Ray's 32:13 are off their season bests by almost two minutes.

The team as a whole ran extremely well, showing a tremendous amount of improvement over the final month of the season. Case in point: on 18 October, we faced Cal State San Bernardino in a dual meet on our home course and barely escaped with a 4-point victory. After the dust cleared at Regionals, we had defeated this same team by 33 points.

Occidental easily won this meet, thereby earning a trip to Nationals in New York. Fourteen teams were represented in San

Diego, and SCIAC teams took four of the top five places. Caltech finished tenth with 256 points.

Women's Race

The women's race began at high noon, and every member of the Caltech Kangaroos bounded off as though there was no tomorrow. In fact, there wasn't. This would be the final race of the season. Fortunately, this race started late, allowing our women the extra rest necessary to race up to their capabilities.

Each of our top four runners managed to post her best time of the season in nothing short of an amazing performance. Clea Bures led the surge with a clocking of 20:16, an improvement of 1:23 in just two weeks. Once again Jarita Holbrook and Vicki Lane battled right down to the wire with Jarita edging ahead. Their times were 22:49 and 22:50 respectively, a 36-second improvement for each of them. Next to cross the line for Caltech was Christina Garden, who improved by 46 seconds with a time of 24:14 in an inspired effort.

Margi Pollack (25:15), Bibi

Jentoft-Nilsen (25:52), and Carmen Shepard (26:04) completed the scoring for Caltech, and, although they didn't accomplish personal bests, they certainly posted strong performances.

The College of Notre Dame handled Occidental's challenge for the women's championship, winning easily with 55 points to Oxy's 67. Claremont, the favorite going in, had to settle for third place with 72 points. Caltech finished 11th out of 16 teams represented at the meet.

A Final Note:

What a way to end the season! Our trip to San Diego was a total blast as we made a point of romping along the beach on Friday night after dinner at the Firehouse Cafe. Afterwards, a tour of La Jolla's shopping district was in order as John Beck was pricing works of art. Later, we explored the caves in La Jolla Cove, and Clea Bures led us on a dead-end tour along the cliffs.

Despite all the excitement, we came to San Diego and took care of business by running out of our minds. This effort brought to conclusion a very successful season as our men had an 8-6 winning season and our women finished at 3-11. Congratulations are in order for the 33 men and 11 women who participated in Cross Country this year. Wait 'til next year!



Vicki Lane (left) and Jarita Holbrook pace each other along the NCAA Division III Regional cross country course at UC San Diego. Holbrook and Lane finished within one second of each other.

New Math Discovery Raises Caltech Polo in Standings

by Skip Shotte

"You're late, class. It would behoove you to get on in here." The round-faced math teacher with the crocodile smile beckoned to his pupils. "Today you're going to unlearn everything you ever knew about math."

"But, Clint," Clark protested, "We learned new math in junior high."

"This is newer math," Clint said, and just smiled. "Okay. How many of you can keep the score of a Caltech water polo game?" Everyone raised their hands. "None of you can do it my way," he said. "How many people know how to figure our win-loss record and our conference standings?" A few less hands this time. "Well, you're all going to learn to do it my way—the right way."

"You see, there's this thing call-

ed *Dodd Arithmetic*, a combination of vector analysis, creative geography and the psychology of 6'2", blond, over-muscled California water polo players.

"Let's start by calculating the score of our last game against Occidental. What was the score reported in all the papers?"

"16 to 12," moaned Bruno. "Oxy won."

"But that's the beauty of *Dodd Arithmetic*, don't you see? A few weeks ago we lost by ten goals..."

"Nine," corrected Randy.

"Same thing," continued Clint. "Between the two games we made up six goals, so we sorta won the game in between games by six goals. And," (waving his hands in the air happily) "if we played them again and made up six more goals, we'd win by two points. I tell ya, this season's too short."

While most of the polo class

was puzzling this over, someone in the back asked, "What about the game against Whittier after that?"

"Well, lessee... the posted score was 13-17, Whittier, but you guys were kinda tired after playing Oxy. I mean, they scored nine goals on you before you even caught your breath and got your heads into the game. So if we take away those nine, the score was 13-8, Caltech." Clint was beaming.

"Okay, okay. But what about this past weekend against Claremont and Pomona?"

"Well," said Clint, "the Claremont game was early in the morning, so I'm willing to write that one off to staying up too late the night before and not even mention the score in public."

"Now, Pomona's different. Do you know that you actually outscored them in the second half? So the way I see it, they won one

Soccer Club, USC Play to Draw, 2-2

by Joe Rush

On Saturday, 8 November, the Caltech Soccer Club (not to be confused with the Varsity team) hosted the USC Trojans. The USC squad was at full strength with 22 players and a team coach. The Trojans were doing very well in their semi-pro league; hence Caltech expected a very hard game.

The game started in a very lively fashion, but neither team generated many chances. Both sides had excellent goal-keeping with many good chances being thwarted by excellent saves throughout the game.

Charles Edwards started in goal for Caltech before being replaced by the regular team keeper Christof Stork. Edwards moved out to play a storming game on defence.

Within 20 minutes tough Caltech pressure converted into a goal as Robert Malaney, with a lightning turn, struck the ball into the back of the net. The Caltech side dominated play at this stage, but against the run of play gave away a soft goal. The team character proved itself within two minutes as Philip Alvelda scored with a thunderous shot.

The play of Colin Gordon and Padhraic Smyth was instrumental in this and many other Caltech openings that Caltech generated during the game. Caltech reached half-time with a deserved 2-1 lead—the result of vigorous play in all quarters including the full-backs Milan Mijic and Bahaa El-Aidi.

In the first 20 minutes of the second half the disciplined USC side picked up their game and really showed some nice touches. Caltech were very much on the defensive for this period. The USC onslaught was finally rewarded by a goal from a near-post corner headed in from close range.

Caltech regained the initiative but had the misfortune of losing both central defenders, Huw Davies and Conrad Jackson, in quick succession. Both went down with ankle injuries. This entailed a rapid and extensive reorganisation. The team showed spirit and commitment in overcoming this handicap and dominated the final 20 minutes of play. The Caltech team were unfortunate not to end up winners through the play of such players as Glenn McCrae and Panos Panicoulau in attack.

Fencing Team Finishes Half

by Parry Tierce

The Caltech Fencing Team closed its first half of the season last Saturday, leaving a promising start in spite of a profound lack of competitive experience in some squads.

The loss of last year's saber squad and the top men's foilist prompted a heartening response from the ranks of the beginners' class: fully half the team is freshman fencers, with two upperclassmen also in their first season of competition. Most of the team's experience lies in the épée squad with three third-season fencers, and in women's foil with one third- and two second-season foilists. All told, the eighteen members have summed up less than thirty previous seasons, a green team indeed.

Leading the squads in victories, épée is having its best season in

continued on page 11

half-length game and we won one. I tell ya, these games're just too long."

"Now everyone knows we beat Redlands, the day after Interhouse. In fact everyone knew we'd beat 'em before the game. That's why the benches were crawling with Beaver fans. But everyone thinks that 18-12 was good enough."

"I told you that number 2 was the only shooter on Redlands' team, and you should cover him tight. He scored 80% of their goals. So if we take away those and add those two shots that should have gone in, the real score (the *Dodd* score) is 20-2½. I like that."

The class was bewildered. A frosh spoke, "You mean our conference record wasn't 1-5, it was 5-1? Does anybody know that we took second place, not fifth?"

"No, nobody knows it but us. Now get on outta here except for Randy, Vince and Chris. I want to talk to you guys. Now, you're seniors—"

That's right, Clint. And we'll be back next year when the alumni embarrass the undergrads. See ya.

CALTECH public events

SEE LONDON

IN BECKMAN AUDITORIUM

Visit "Royal London" from your armchair in Beckman Auditorium tonight as Doug Jones personally narrates his fascinating film beginning at 8 p.m. Edward the Confessor's Tom and Coronation Chair in Westminster Abbey set the scene for the progress of England's Royalty from Henry VIII and Elizabeth I through the Queen Anne, Georgian, Regency and Victorian periods.

The coronation of Elizabeth II brings you to the 20th Century and the wonders of this great city today. From the Beefeaters to the Theatre District, tonight's relives the good times and bad of Royal London. Tickets are priced at \$7.50-6.00.

Monday, November 24 brings the **Occidental/Caltech Orchestra** to Ramo Auditorium. Under the direction of Allen Gross, the orchestra will perform Beethoven's Egmont Overture, Op. 84a; the West Coast premiere of Subramanian's Fantasy on Vedic Chants for Indian Violin and Orchestra; and Respighi's The Pines of Rome. Admission is free.

Following the Thanksgiving holiday, Dr. Peter Goldreich will give a free Earnest C. Watson Caltech Lecture entitled "**Planetary Rings**." This presentation will take place on Wednesday, December 3 at 8 p.m. in Beckman Auditorium.

Recent observations have revealed that planetary are both more common and more varied than previously believed. Dr Goldreich will summarize the observational data from the Voyager 2 spacecraft and provide a unified description of the simple mechanisms that account for the morphological characteristics of different ring systems.

For further information about the exciting Public Events scheduled this season, call campus ext. 4652.

SPORTS

Fencing

from page 10
three years. Team co-captain Joe Beckenbach has climbed to eleven wins in eighteen bouts, closing the half-season with three strong victories last Saturday at UC Santa Barbara. Andrew O'Dea's game continues to improve, as does his standing, with seven wins. Despite only four bout victories, Jeff Greason remains a key épéist: two of his victories ensured squad wins against UCLA in early November and UCSB last Saturday.

Next in seniority stands the women's foil squad, led by team co-captain Dana Pillsbury. Pillsbury has won fifteen of her twenty-four bouts, more than her four colleagues combined. Ann Lewis shows steady improvement in this, her second season, with four wins. Newcomer Karen Siegrist has been fencing well, her record of three victories notwithstanding. Dee Morrison has managed to fence several bouts—and win two—despite entanglements with cross country running. Freshman Cathy Crets-

inger has much potential that is currently being developed; her first win has yet to come, though on several occasions she has come close against much stronger opponents.

The men's foil squad must look to leader Paul Rubinov for what little previous experience they have. Rubinov holds top spot on the squad with seven victories. Freshmen Eric Schell and Robert Coker, each with three bout wins, are on the verge of making the breakthrough from losing very close bouts to winning those same bouts. Bruce Bell has two victories to his credit, as does Minei Chou (who needs no lessons in aggression—he pushed the top man on UCLA's squad down the whole length of the strip and beyond).

The entire saber squad is entirely new to the sport; even sophomores Ken Kelley and Ralph Biernacki are in their first season. Leader Kelley heads his squad with six wins, followed by freshmen Sean Johnston and Charles Fu with three. Biernacki and freshman Brian Brandt have also been contributing to the squad's efforts, with less success than they have wished.

In addition, both Biernacki (saber) and Schell (foil) have switched to each other's weapons when needed to prevent a team forfeit.

Squad wins against Cal Poly Pomona (saber) and Cal State Fullerton (épée) will not count in the league standings due to problems with sponsors for their first half-season.

Co-captain Beckenbach expects the season to be relatively slow due to the greenness of most team members. "This first half [of the season] is giving much of our team time to really get going in their weapons," he comments. "We're fencing on four to six hours of practice a week against several teams which practice more than our football team, and pull from a pool of fencers about the size of Dabney Hovse. It's surprising we do this well at all on a regular basis."

The second half of the fencing season begins this Saturday in the gymnasium at 1:00PM with a three-way meet between host Caltech, Cal Poly Pomona, and UC San Diego. The gym will be open at 12:00 noon for spectators. Come out and see the Battling Beavers at their first home meet this season!

Violence

from page 3

Jeanne Noda, Assistant Dean of Students.

Meetings

Some members of the administration met Monday morning to discuss what happened Saturday night. Those attending were Jim Morgan, V.P. of Student Affairs; Chris Brennen; Bernie Santarsiero; Jeanne Noda; and Gary Lorden.

The ASCIT Board Of Directors held a meeting Tuesday night and the IHC Wednesday night to establish the new plan for future Caltech parties.

This year's Interhouse violence, it was pointed out, is unprecedented. Although there was some vandalism at a seven-house party last year, never before have there been assaults of a violent nature.

Two major factors may have contributed to the problems which arose.

The lack of adequate security trained to deal with large groups (according to Brennen, there were about 20-25 "undesirables" causing trouble) certainly made it difficult to control the situation. Whenever the four Caltech Security guards escorted a group off of the campus, the group would circle around and reenter from another side. Brennen said that the inability of the security force to remove troublemakers permanently from the campus was the reason that it took from midnight until two o'clock to finally get the off-campus crashers to stay away.

At the ASCIT discussion meeting, various measures were discussed to increase security at Caltech social events. Holding the parties in the gym or other enclosed space was one suggestion. This would allow tightly controlled entrances and exits, ensuring that those who get bounced stay bounced.

However, ASCIT president Clea Bures admitted that it is clearly not feasible to put Interhouse in a box since that would require

some sort of fence around all seven houses. To deal with the complexity of the problem, Steve Gomez, IHC chairman, suggested, "We should contract with an outside security agency, especially after seeing how Caltech security handled the problem."

The ASCIT group decided that a visible police force could do a much better job of protecting Interhouse than Caltech Security. As Gary Lorden pointed out, "The people who are actually here are Rent-a-cops; they're not trained [to handle a party situation]."

In general, there was a feeling that the security was not all it could have been. "I didn't see a guard all night," said Page freshman Mark Fey. There were no extra precautions taken to protect Interhouse, just the usual two campus security people, plus an additional two who showed up at midnight to change shifts. But Chris Brennen explained, "I've never encountered any real trouble at Interhouse; there seemed to be no real need to hire additional security... We were basically victimized."

And indeed, more security might not have been necessary, were it not for the other major problem, that of advertising.

Word of Interhouse naturally leaks to non-Caltech people to some degree, and every year there are many uninvited guests from local high schools and colleges. These, however, have not been a problem in past years. This year, some students went out to the Plaza Pasadena, among other places, and distributed flyers explicitly advertising and detailing Interhouse. These flyers may have attracted persons who did not understand the spirit of Interhouse nor Caltech. In the opinion of Chris Brennen, "It [the advertising] was an ill-judged thing to do."

Guidelines

As a result, a set of guidelines were set up by the IHC. These rules apply to parties that will feature a live band and multiple house parties. The rules are as follows (according to John Beck):

① A security guard will be posted wherever alcohol is being served. There will be no bottles; all drink will be served in plastic cups. All students should furthermore be cognizant of existing federal laws concerning alcohol and other illicit substances.

② There will be no outside advertising except under rare circumstances and then only by permission of the MOSH and either the IHC Chairman or the ASCIT President.

③ Each house shall control access to the point of there being only one entrance, which shall be manned by students and monitored by security.

④ Security must be informed at least three days in advance. They must also be notified of any bands, and additional security will be arranged appropriate to circumstances."

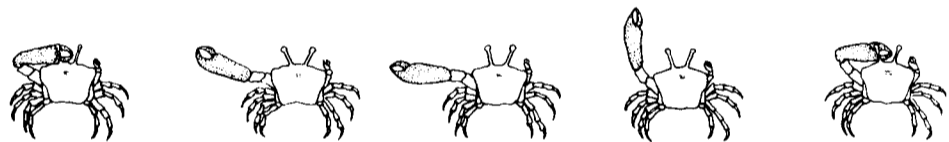
The repercussions of Interhouse are emotional as well. Said Cheryl Schmitt, "This was very upsetting to me. But I'm thankful no one was hurt more than they were." But the discussions are far from over.

On Monday, there will be an ASCIT open meeting to discuss policies for future Caltech parties. Everyone is welcome, but ASCIT particularly wants people to come who are involved in planning parties, such as the house social teams, and also those who deal with invitations to non-Techers. The meeting will be held at 8PM Monday, November 24 in the boardroom in Millikan.

ASCIT hopes for a large turnout. Gary Lorden said, "I think it's very important that this be something people talk about."

WEEKLY SPORTS CALENDAR

Day	Date	Time	Sport	Opponent	Location
Fri.	11-21	TBA	Basketball	Christ Col. Invit. Tournament	Christ College
Sat.	11-22	TBA	Basketball	Christ Col. Invit. Tournament	Christ College
Sat.	11-22	TBA	Cross Country	NACC National Champion.	Fredonia State U.
Sat.	11-22	1:00PM	Fencing	Cal Poly Pomona & UCSD	Caltech
Sat.	11-22	1:00PM	Football	Victor Valley JC	Victor Valley JC
Sun.	11-23	12:45PM	Ice Hockey	CSU Northridge #2	Pickwick Ice Arena
Tue.	11-25	7:30PM	Basketball	LIFE College	LIFE College
Wed.	11-26	9:45PM	Ice Hockey	U.C. Irvine	Pasadena Ice Center
Tue.	12-2	7:30PM	Basketball	Pacific Christian	Pacific Christian
Wed.	12-3	9:45PM	Ice Hockey	U.C. Irvine	Pasadena Ice Center
Fri.	12-5	TBA	Basketball	Washington U. Tournament	St. Louis
Sat.	12-6	TBA	Basketball	Washington U. Tournament	St. Louis
Sat.	12-6	11:00PM	Football	Pasadena Police	Caltech



GNP SHOWCASE



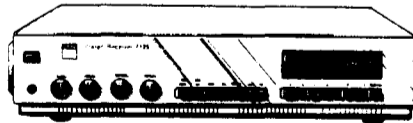
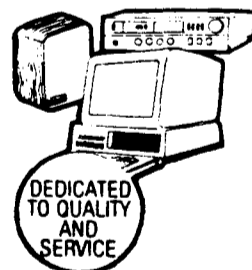
HELLO AGAIN...

THIS WEEK WE ARE CONTINUING WITH OUR BUY-OUT ON THE CLASSIC NAD MODEL 7125. KNOWN FOR IT'S UNBELIEVABLY POWERFUL 25 WATTS/CHANNEL IT'S ON SALE FOR ONLY \$199! NORMALLY \$300, THIS RECEIVER HAS AN INCREDIBLE AMOUNT OF HEADROOM WHICH HAS GIVEN IT A REPUTATION OF BEING "MORE THAN ENOUGH" POWER FOR ANY AVERAGE SIZE ROOM. I MIGHT ADD THAT WE ONLY HAVE NINE UNITS LEFT, SO FIRST COME... (YOU KNOW!).

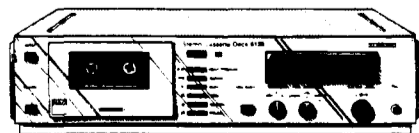
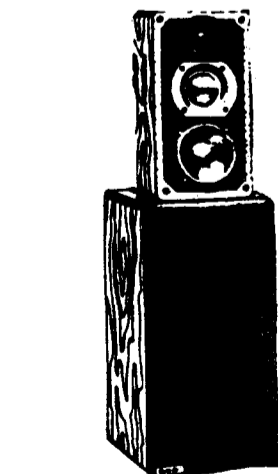
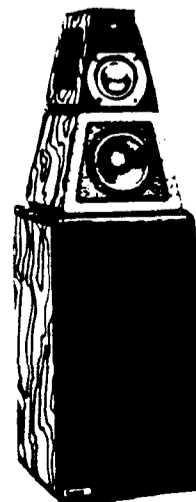
AND FOR THOSE OF YOU CRAVING A PRIVATE "RIDE", NAKAMICHI HEADPHONES ARE ON SALE THIS WEEK FOR ONLY \$59 (NORMALLY \$80). THERE IS AN UNLIMITED SUPPLY AT THIS PRICE, BUT THE SALE IS ONLY AUTHORIZED FOR 1 WEEK!

REMEMBER OUR EXTENDED HOURS FOR THE HOLIDAY SEASON. M-F 11-8, S/S 11-6, (OPEN 1 HR EARLIER AFTER THANKSGIVING!

SO UNTIL NEXT WEEK...



7125



WHAT GOES ON

Announcements for *What Goes On* must be submitted on an announcement form (available outside 107 Winnett) or on a plain piece of paper. Please indicate the date(s) you want the announcement to run. Send announcements to 107-51, or put them in the mail slot in the door of 107 Winnett. Announcements must be received by the Tuesday prior to publication.

ASCIT Open Meeting!!!

ASCIT will be holding an open meeting on November 24 at 7:30 pm in the Millikan Board Room to discuss what can be done to improve safety at Interhouse and other large campus events. Anyone who cares about having these events please attend and give us your suggestions or opinions.

Amnesty International

The Pasadena Chapter of Amnesty International USA will have its monthly meeting on Thursday December 4th at 7:00 pm in the Y Lounge of the Winnett Student Center. They will present a video on the situation in Sri Lanka, and will continue their work on Turkey, Afghanistan and Chile. The meeting is open to anyone interested. For more information, contact Eric Majani, Caltech 116-81, x3729. These meetings are regularly held on the first Thursday of every month.

Med School Information

James Dunn, a Caltech alumnus and a second year student in the Harvard-MIT Division of Health Sciences and Technology, will discuss medical school programs from 12 noon to 1:00 pm in Winnett Lounge. Students considering Medical School are urged to attend.

Big T

Anyone interested in working on the *Big T*, Caltech's one and only yearbook, should come to Winnett Student Center, Clubroom 1, on Monday, November 24th at 7:30 pm for an organizational meeting. People who are interested and/or knowledgeable in photography are especially welcome. There is the possibility of receiving credit for working on the yearbook, and there are also two openings in the assistant editor position, which pays \$100. So don't miss out on all the fun and excitement; join the Caltech publications empire today. If you can't make the meeting, but would like to work on the yearbook, please contact John Haba at 578-9166.

New Course

SS 133—Topics in Anglo-American Law, will be taught on TW 1-3:00 in the Winter Term. Instructor: Alan Schwartz.

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CALTECH BOOKSTORE—

GREETING CARD 1/2 PRICE SALE: All "recycled paper" brand greeting cards 50% off retail price. Stock up now and save. Only at the Caltech Bookstore.

RATES. \$2.50 for first 25 words;
. 10¢ for each additional word.
Send written ad with payment to 107-51.
No charge for on-campus lost & found.

LOSCON the 13th, in 3-D

From Friday to Sunday of Thanksgiving weekend, the Pasadena Hilton will be host to a large and fun science fiction convention. The guest of honor is John Brunner, and various other major SF talents will be in attendance. Cost is around \$20 for the whole weekend, including lots of movies and other programs. Good stuff.

Subramaniam & Symphony

The noted classical Indian violinist and composer Lakshminarayana Subramaniam will appear as guest performer with the Occidental-Caltech Symphony Orchestra in the West Coast premiere of his *Fantasy on Vedic Chants* for Indian Violin and Orchestra. The concerts will take place on November 24 and 25, 1986.

The concert on Monday, November 24, will take place in Ramo Auditorium here at Caltech at 8:00 pm; the Tuesday concert will be in Thorne Hall, Occidental College, at 8:15 pm. Allen Robert Gross, Director of the Occidental-Caltech Symphony, will also conduct Beethoven's *Egmont Overture* and Respighi's *The Pines of Rome* on the program.
Concert admission is free.

Parapsychology Doubted

The Southern California Skeptics and the Caltech Y will present a free lecture on Sunday, November 23rd entitled "Parapsychology: Its Current Status" by psychologist Dr. Ray Hyman at 2:00 pm in Baxter Lecture Hall.

Can "gifted" people really move and bend objects with the powers of their minds? Are there people who can actually read other people's thoughts and view hidden objects from great distances? Many people are under the impression that psychic phenomena have been conclusively established through many experiments by reputable scientists. Have they? Come and find out.

Heidi's Couch

Anyone who can acquire new labels for Heidi's Couch in the Ricketts courtyard will become eligible for free use of the couch for a week. All other users will be tickled and showered by Heidi.

Musical Extravaganza

Come one, come all to the greatest musical extravaganza of this term. MOJO NIXON and SKID ROPER will amuse, entertain and even disgust you with their "blasting, raw, animalistic, sexual, base, and supercharged" original talent. One of the town's rawest, yet most genuine talents," says the *L.A. Times*. Come and see for yourself, today at noon on the quad, courtesy of the Y and your ears!

Research Associateships

The National Research Council announces the 1987 Resident, Cooperative, and Postdoctoral Research Associateship Programs for research in the sciences and engineering to be conducted in behalf of 26 federal agencies or research institutions, whose laboratories are located throughout the U.S.

Approximately 450 new full-time associateships will be awarded on a competitive basis in 1987 for research in the sciences and engineering. Most of the programs are open to both U.S. and non-U.S. nationals, and to both recent Ph.D. degree recipients and senior investigators.

Awards are made for one or two years; senior applicants who have held the doctorate at least five years may request shorter tenure. Stipends for the 1987 program will begin at \$26,350 a year for recent Ph.D.s and be appropriately higher for senior Associates. A stipend supplement of approximately \$5,000 may be available to regular (not senior) awardees holding recognized doctoral degrees in those disciplines wherein the number of degrees conferred by U.S. graduate schools is significantly below the current demand.

Applications to the National Research Council must be postmarked no later than January 15, 1987 (December 15, 1986 for NASA), April 15 and August 15, 1987. Initial awards will be announced in March and April (July and November for the two later competitions) followed by awards to alternates later.

Information on specific research opportunities and federal laboratories, as well as application materials, may be obtained from: the Associateship Programs, Office of Scientific and Engineering Personnel, JH 608-D1, National Research Council, 2101 Constitution Ave., N.W., Washington, D.C. 20418. Phone (202) 334-2760.

STRIVE Meeting

Caltech Society To Reduce International Violence on Earth (STRIVE) is now meeting regularly on Thursdays at 5:15 pm in Clubroom 1, Winnett. Everyone is always welcome. Some of our current projects include an alternative job fair and a survey. Stop by if you are interested in helping with programs, if you have ideas for new programs, or just to share your thoughts about world affairs.

Movies From India

Remember all the fun we had watching Indian movies last time? It is going to happen all over again this Saturday, November 22. Video Movies from countries in the Indian subcontinent will be shown in the Y Lounge (second floor of Winnett Center). The movies will start at 8:00 pm. Two movies will be in Hindi and one in a South Indian language. The movies are open to everyone and are free. For information, contact Deven Kalra, x6790 or 793-8632.

Korean Scholarships

The Korean American Scholarship Foundation is offering scholarships for 1987-88. To qualify you must be a full-time student of Korean American heritage. Scholarships average \$1,000 per student. Deadline is 31 January 1987. TO receive an application write to:

Scholarship Committee
Western Region Office
Korean American Scholarship Foundation
Box 3388, Santa Ana, CA 92703

Scholarships For the Blind

The National Federation for the Blind has six scholarship programs available for 1987-88. Applicants must be legally blind. Scholarships are awarded on the basis of academic excellence, service to the community, and financial need. For more information contact the Financial Aid Office, 12-63. Deadline is March 31, 1987.

Wise Internships

WISE, Washington Internships for Students of Engineering, is looking for a few good third-year engineering students. Students will study the roles of engineers at government hearings, as staff members of legislative and regulatory bodies, as lobbyists, as members of corporate staffs interacting with governmental agencies, and as representatives of professional engineering societies, standards setting organizations, or public interest groups.

In addition, each student will complete a project that will document a specific engineering-public policy issue, address topics of concern to the participating societies, and/or form the basis for technical papers and case studies to be disseminated by the sponsoring societies. There is a stipend and a travel allowance.

For application forms, write to:
WISE
American Society for Engineering Education
Eleven Dupont Circle
Washington, D.C. 20036.
Application Deadline, December 31, 1986.

New Philosophy Course

A new Philosophy course has been added to the Winter schedule:
PI 102—Foundations of Moral Thought: Is Morality Objective?
This course will be taught by Arthur Kuflick on Thursdays from 2-5:00PM.

GEM Fellowships

The National Consortium for Graduate Degrees for Minorities in Engineering, Inc. (GEM) is accepting applications for its fellowship program which will provide 125 fellowships to minority students in engineering for 1987. Application is open to those falling into the groupings of American Indian, Black American, Mexican American or Puerto Rican, who are U.S. citizens. 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 encouraged to apply.

Each fellowship participant must work as an intern for a member employer in the program and must complete the academic work for the master's degree at one of the member universities. There are 50 member employers and 50 member universities in the program at this time. The fellowship includes a stipend of \$5,000 per academic year plus a salary for summer internship as well as free tuition.

Applications must be received by December 1, 1986. Awards will be announced by February 1, 1987. Information and applications may be obtained from: GEM, P.O. Box 537, Notre Dame, IN 46556.

CIC Fellowships

The Committee on Institutional Cooperation Minorities Fellowship Program is offering 40 fellowships to members of under-represented minority groups seeking PhD degrees in a wide variety of fields in the areas of Social Sciences, Humanities, Sciences, Mathematics and Engineering. The member universities are the midwestern Big 10 plus the University of Chicago. (If you don't know who's in the Big 10, find a sports section—this is football season).

Each CIC Minorities Fellowship is for four academic years. For 1987-88, each award will pay full tuition plus a stipend of at least \$7,000. The eligibility is kind of complicated, so contact them as early as possible. Application deadline is January 7, 1987. Write: CIC Minorities Fellowships Program, Kirkwood Hall 111, Indiana University, Bloomington, IN 47405, or call toll free (between 6 am and 1 pm Pacific time) (800) 457-4420.

Volleyball Tournament

The Caltech Men's Volleyball Club is sponsoring a volleyball tournament between randomly chosen triples teams. The tournament is open to ALL Caltech men and women. There is no fee or advance registration and AWESOME PRIZES will be awarded to the first and second place teams. The tournament will be held in Brown Gymnasium on Sunday, November 23. Registration: 8:45AM, Tournament Play: 9:00AM-1:00PM.

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