

Caltech
needs a new
mascot . . .

California Tech

the
Horny Toad

Associated Students of the California Institute of Technology

Volume LXVI.

Pasadena, California, Thursday, April 8, 1965

Number 23



—Fabian Bachrach

Simon Ramo, YMCA Leader of America, is here Wednesday through Friday this week for a series of lectures, discussions, and bull sessions.

Space Seminars

BY JOHN ROUSE

The current visit of Dr. Harold C. Urey to Caltech marks the beginning of a new series of informative sessions. These are the Caltech-JPL Space Seminars, which are designed to keep Caltech and JPL personnel informed on background and current material pertaining to space science.

The series will consist of monthly groups of informal seminars at which a guest speaker will discuss his field. These seminars will be held on Monday, Wednesday, and Friday afternoons at 3, and the speaker will be available for consultation and bull sessions at other times. The place in which the seminars will be held will vary; this week's are being held in Beckman.

In the Beginning . . .

Urey was asked to give the first presentations because of his preeminence in his specialty: formulating theories on the creation

of the solar system. Urey is a Nobel Laureate and a University of California Professor-at-Large, and has published many papers on creation, including a book in 1952.

Urey did not attempt to break his lectures into three logical sections. He stated, rather, that he would just talk until his time was up, and then continue the next time from where he left off. This planning helped the informal attitude intended for the series.

The seminar Monday afternoon was concerned with the early history of the solar system based on evidence obtained from meteorites. Urey discussed the significance of the relative abundances of minerals and their distributions in meteorites, and also talked about interpretations of pitting in meteorites' after-surfaces.

Schwartzkopf To Air Arias

Described by various US critics as "touching the heart strings of every listener," "dazzling the ears with her arias," and "rousing the audience to frenzied jubilation." Miss Elisabeth Schwartzkopf will appear April 21 in Beckman.

She will present a program of German folk songs and arias. Prices range from \$2.25 to \$4.50, and Caltech students will get a dollar discount. This will be her only appearance in the western US.

Miss Schwartzkopf has been a leading diva for several years at the Berlin Civic Opera Company and the Vienna State Opera House and has made myriads of recordings. She has appeared on television, on radio, and in motion pictures, as well as in opera houses, and her publicity photos make her look like a beauty queen.

Choices Lacking in Vietnam

BY NUDELSON

Saturday last, the Caltech YMCA presented an Institute on "Choices in Vietnam." Unfortunately, the word "choice" soon turned out to have a distorted meaning. There were basically two reasons for this. First was the choice of speakers. Second was the audience attending the Institute. With the exception of a few rather sullen Caltech YRs and some of the downy-cheeked local high school youth, the audience appeared to consist mainly of people over fifty dedicated to the principle that there is in reality only one choice in Vietnam: get out now and turn the whole problem over to the United Nations.

This fact soon turned the affair from a discussion about choices in Vietnam to something rather resembling most Republican political rallies last fall, namely, a convocation of the convinced. One surmised that it would be inadvisable to even dare suggest that anything the Administration is doing in Vietnam

has any merit at all. As one speaker, Dr. Alexander, put it informally: "There are only two choices — mine and all others."

Hawks vs. Eagles

All people broke down into two types: those who agreed with those present, and all others who were rather unceremoniously labeled "hawks." In fact, one speaker, when asked of the personnel makeup of the recent five-day, high-level White House conference on Vietnam, shook his head sadly and replied, "I happen to know that they were all hawks." Several of the grand old ladies then clucked their tongues in solemn unison.

Alexander was the first speaker and was supposed to discuss "Historical Perspectives." He started out as if this were his topic, but later switched to a rather emotional diatribe about the age of McCarthyism, in which we apparently all live, jet-age America, and the President as a four-year king; soon he was talking in nothing but slogans. Ex-

(Continued on page 2)

Industrial Leader Ramo Comments on Cybernetics

Intriguing the Dabney audience with comments about our present advanced technological age, Dr. Simon Ramo began his 3-day stay at Caltech as a Leader of America. Ramo lectured yesterday at 11 on "Which Is It—the Atomic, Space or Electronic Age?"

Ramo started by noting the influence of public opinion on applied science. The age or era must be symbolized by a picture, and in the case of the electronic, space, and atomic ages, it has been a nucleus with electrons

zooming around it.

This advanced technology got its start around 1936, the year Ramo got his PhD from Caltech, when research into the properties of freed electrons flowing in streams indicated the potential of the field of electronics. However, even with the high-powered techniques for information handling now available, the electronics age has yet to reach its culmination.

Atomic, Space Ages

The atomic age was, of course, ushered in with the detonation of the first atomic bomb during WW II. All the electronics companies immediately sought an affiliation with atomic or nuclear physics; they hired physicists, changed their names, or built electronic components for nuclear systems. Presently, the space age is seemingly upon us with all the manifestations evident: researches into a moon landing, rockets to Mars, and another governmental administrative department.

Despite these departures from electronics, Ramo still sees our age as the electronic age. In any age modern warfare—given equal armaments and transport capabilities—centers around intelligence, command, and strategy, all now delegated largely to electronic devices. With space technology, it is again the electronics control of mechanical devices that is the major problem.

"Probably," Ramo stated, "unless we get visitors from another

planet, the space age won't come until the year 2000 when our 2-D world adds a dimension, and if you don't like this orbit, you can get one of your own."

In response to a question from the audience, Ramo said that it is because of a lack of adjustment and sociological versatility that changes in society do not follow in step with scientific and engineering advances. The glamorous aspects of an "age" often overpower the more subtle significant ones. For instance, preoccupation with space now foregoes the implementation of solutions to the LA smog problem. Consequently, Ramo suggested, historians far in the future may call this period the age of struggle.

Bach and Computers

In closing the session, Jim Pearson of the planning committee especially reminded students of the address Ramo will give today in Winnet entitled "Computers, Creativity, and Bach." There is a reception scheduled for tonight at the home of Dr. Frederick Lindvall, chairman of the division of engineering, 1224 Arden Road, Pasadena.

Congratulations

Dr. Robert Oliver, professor of economics, won last Thursday's run-off election and is now one of the Pasadena City Directors.

Notices

SEE JUDY COLLINS

Only three big weeks until the biggest ASCIT concert ever. Get your tickets at ridiculously cheap prices from your friendly house treasurer soon or you will have to take potluck with all the trolls from the outside world.

TICKETS FOR BUNDY

Tickets are now available through the good offices of the Institute's genial abbot for McGeorge Bundy's lecture on American security. The President's advisor on foreign affairs will speak in Beckman Tuesday, April 20, at 8:30 p.m.

ASCIT OFFICES OPEN

Applications for the following appointive offices should be submitted in writing to Fred Lamb, 204 Ruddock, no later than noon on Monday, April 19: **little t** Editor, Darkroom Chairman, Election Committee Chairman, **Big T** Business Manager Head Education Policies Committee, Yell Leader, Student Day Chairman, and Assembly Committee Chairman. For further details see the ASCIT minutes.

SOS

Navy recruiters will invade the Greasy next Monday, April 12. Techmen motivated to defend their Alma Mater will receive indoctrination on the various Navy officer programs available next year. See the Navy and join the world!

BAND CONCERT

Don't forget the Caltech Hunter Mead Memorial Concert, May 2, in Beckman. Bring guests to hear numbers by Kleinsinger, Moussorgsky, Tchaikowsky, and Weber; to listen to famous soloists Albert

Klinger and John Johnson; to watch renowned composer and conductor Carmen Dragon.

General admission is \$1 for adults, \$.50 for students and children; tickets are available in the Beckman ticket office.

GET YOUR FREE ASCIT MONEY

Going fast, only \$10,000 left. Budget requests must be in to Eric Young in Ruddock by April 26. Requests must be written out, itemized, and reasonable.

VARSITY MEASUREMENTS

If you are competing in a spring varsity sport, or if you have already lettered in varsity basketball, soccer, or wrestling, be at the Lloyd House Conference Room Thursday, April 15, at 7 p.m. to be measured for your sweater or jacket.

CALTECH INDIAN LOVERS

Campus redskins are invited to the big POW WOW benefit show sponsored by the LA Many Trails Club. Bring scalps and squaws to the Olive Recreation Center in Burbank this Saturday night at 7:30. Havum yourself heap big fun. Ugh.

CQ CQ DE W6UE

The Caltech Amateur Radio Club will have a meeting at 7:30 in Clubroom 2 tonight. Officers will be elected. Anyone interested in joining the club is invited to attend.

YOUNG REPUBLICANS EAT

in Chandler next Thursday before the April meeting. Sign up with any officer before Wednesday noon. Bring your friends. Elections this month—campaign statements due Monday. Officers, get your reports written.

Editorials

EPC Poll on Frosh

The Educational Policies Committee will not conduct a poll this year. Earlier they voted to have a full-scale poll on the order of last year's, covering all courses being taken at the time. Then they asked the Student-Faculty Relations Committee for support of the poll, and were turned down. That committee decided—and we agree with them—that a full poll was not needed every year and would only be a waste. In fact, the original idea called for a poll every three or four years, one generation of students.

But there is one poll the EPC should conduct now. This year the freshmen have been admitted under a new procedure, they have been deprived of grades, and some of their courses have been modified. Amid all these tremendous changes the frosh have been much talked about, but apparently no one plans to systematically ask them what they think about it all.

The EPC is the group to do this, for the committee was set up for just this purpose. And, cooperating with the Student-Faculty Relations Committee and the Ad-hoc Committee on the Freshman Year, they will be doing both the Institute and the students a great service.

—Greenfeld
Berry
Hendrickson

Knowledge Industry Growing

BY BART GORDON

Most of the students here might not realize it, but they are involved in the fastest growing industry in the country. According to an article in *Fortune Magazine*, this industry is knowledge. In 1958, 30 percent of the gross national product, or 136 billion dollars, were devoted to knowledge. In 1963, however, this figure had risen to 195 billion dollars. Thirty-six percent of all people not involved in agriculture work were in the knowledge industry.

This industry is not simply confined to pre-college and college education. It encompasses research and development, printing, entertainment, professional services, and communications. In short, everything in our society that serves to inform man.

The problem of education is an ever increasing one. With more schooling needed to advance in today's world, more and more

people are seeking more and more knowledge. This puts a severe burden on the teachers of this age and has caused the evolution of a new idea, the teaching machine or other programmed learning to take the place of, or simply, the work of the instructor. The emphasis now is to teach the basic concepts of a subject to the student and he can discover the laws by himself. PSSC Physics is a good example of this.

Knowledge Factory

Computers are also playing an important part in this educational revolution. Questions, answers, and explanations are written into a computer program; the students are taught to communicate with the computer by means of individual consoles. Sophistications of this system could lead to a teaching program geared to the capabilities and intelligence of the individual students. It is speculated that using this method, the mathematics taught to the

The Critical Ear

BY BRUCE HUDSON

Peter, Paul and Mary; A Song Will Rise; Warner Brothers, Monophonic.

PP&M's *A Song Will Rise* opens with Dylan's "When the Ship Comes In." (Bobbies' songs are more in than he is.) The pounding, repetitive rhythm and very matter-of-fact delivery completely wipe out any social significance the author had in mind. Very good — don't stir up the little old teenagers. The next sweet, plaintive ballad ("Jimmy Whalen") is good background music for a refill before the beat picks up with an arranged, adapted spiritual "Come and Go With Me." Pas mal.

Later we are informed of a mine disaster in Nova Scotia in "Ballad of Spring Hill." Poor working conditions, etc. Most of us are too callous to care. Mary then takes off with the "Motherless Child" bit, but she hasn't really got Odetta's depth.

Flip Side Swings

The second side is another matter — buy only the flip side. Lee Hays (Weavers) has a good item

in "Wasn't that a Time." Polemics against fear and hate are safe, and this roars along. Next "Monday Morning" we hear that getting married at 16 is bad, but that some girls still do it.

"The Cuckoo" is a genuinely beautiful song. Gamblers loose big, but some of them have very good traditionals written about them.

Now the three winners start. "San Francisco Bay Blues" swings with PP&M at their best. The next number, "Talkin' Candy Bar Blues," is a really funny song about nice guys. The skin crawls when a nice guy tries to make small talk with people holding baseball bats and hat pins; then the cops come.

The best song on the album is the last one: "For Lovin' Me." They really seem to get some feeling into this song about lack of feeling. The words are simple and strong and even a little biting. Besides, the hero is the hard, detached playboy we all wish we could be.

If you like their style, buy the record. It's probably their best.

Letters

Sex Unlimited

Editors:

I am a 18 years Viking miss from Norway.

I wonder if you would please help me get a pen-pal at your school?

I would like a boy between 20-24, interested in American folk music, and otherwise a little of everything. I would like him to be dark-haired.

Do you think you could find me such a boy?

If he would enclose a picture, that would be fine, but it's not necessary.

I hope to hear from somebody,

Yours sincerely,
Anne-Lise Braastad
Nandrupsvai 7A
Oslo 4
Norway

Droll Brings 21% More Raisins

There once was a young girl who liked raisins very much — so much that she practically became addicted to them. Because of their sweetness, and because she sometimes chose to not brush her teeth, she soon began getting toothaches.

Her mother finally became alarmed and took her to a dentist. He found that she had more cavities than could be explained by her age. "In fact," the dentist said, "the frequency of her cavities is the same as the frequency we might naturally expect of raisin-eating cavities."

college junior could be introduced at the high school level.

In other areas of the industry, the demand for paperback reprints of best-sellers or quality non-fiction has increased almost three times from 1954 to 1963. There has also been an increase in the sales of technical publications and daily newspapers. The number of symphony orchestras has doubled since the war, and record and box-office sales have also shown a marked increase.

This knowledge industry, the article concludes, is an ever increasing one, and it is all for the better. Someday, the industry might account for close to half of the GNP, a fitting indication of the value of knowledge in the world today.

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Institute on Vietnam

(Continued from page 1)

tremely distasteful was his repeated and inept analogy between the pre-World War I Germany of Kaiser Wilhelm II and our present-day United States.

Sheinbaum and Finkle

The next speaker was Dr. George Nironha, who spoke on "An Asian View of the Vietnam Crisis." This talk was well done and interesting. After a break, there was a panel on "US Policy and Choices in Vietnam," featuring four gentlemen: a genuine Vietnamese intellectual; a nuclear physicist at La Jolla, one of Rand Corporation's not-so-finest; and two other gentlemen, Sheinbaum and Finkle, who were much better informed than the other two and gave good presentations.

Just when a heated exchange looked likely, we were told to break up into small discussion groups, which were characterized by an in-groupishness (one woman kept using a sweeping "we" as if all concerned were of one mind) and a certain lack of relish for coming to grips with the real problem. This problem is: how can we best proceed to our goal of improving the welfare of the people of Vietnam, given that we are in the mess we are in now?

Let UN Play

The most responsible answer came from one gentleman who suggested that we withdraw and turn the whole problem over to the United Nations and "let them play with it." It was to this practical problem that the evening speaker, Dr. Gilbert F. White, addressed himself.

Dr. White's stress was that "this is the time to ask searching questions." He discussed four possible policies or actions which have been or could be used: "continuing what we have been doing," escalation, withdrawal, or neutralization, as was done with Laos.

He then laid stress upon the current development program of the Mekong delta by Thailand, Laos, South Vietnam, and Cambodia, which has been under way since 1957, as an illustration of how the countries of the region can work together without stress for their mutual benefit. He then proposed that the United States assist in helping out many such

projects, with cessation of hostilities being understood as a necessary adjunct to any such program.

Multilateral Effort

White stressed that this program is not a political solution but it is a symbol of a way to a political solution, and it is no exaggeration to say that the kind of action it exemplifies might be a basis for negotiation. White also said that this needs to be a multilateral effort by countries with an interest in the region — not necessarily the United Nations. This talk was by far the best presentation of the day.

Following the speech was a question and answer period which need not be highlighted except for Mr. Joel Edelman's reply to a question on his solution for Vietnam. He said, "I don't have any solution of my own, but I do possess a lot of information and so I'll be glad to comment on or criticize any that anyone else may propose."

AFROTC Gets Brass Flight

AFROTC senior Grant Blackinton was able to fly home for spring vacation at no charge, courtesy of the US Air Force. He saved about \$90 air fare by taking an Air Force flight with space available.

Blackinton's return trip was in style. Arriving at Ent Air Force Base in Colorado on the arranged date, he was shown aboard a well-appointed Lockheed Jetstar. Up roared a line of automobiles, and the Air Force's General Curtis Le May and aides marched on board!

Blackinton was not the first Caltech ROTC man to take advantage of this service; junior Stewart Davey flew to New York over Christmas via the Air Force.

WANTED

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The Rev. Terence E. Lynberg
Episcopal Chaplain

College Group meets every
Sunday evening at 7:00 p.m.
in the Parish House.

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SPORTS

IH Basketball Starts

There were no major surprises Monday and Tuesday afternoons as the 1965 Interhouse Basketball season began in earnest. Sloppy passing and atrocious foul-shooting marred otherwise well-played games.

The game that will probably decide the Interhouse basketball championship was played early this season. Blacker showed a lot of rebounding muscle and some hot shooting in beating Page 49-40.

Blacker managed to parlay a superiority on the boards into an 11 point lead at the end of the half. Consistent outside shooting by Aschbacher and Tyler constituted almost all of the Blacker attack, while Drews did much of the rebounding.

Page managed to come back in the second half, but was never able to overcome the large deficit. Jubin, with its shooting, rebounding, and ball-handling, was the spark of the team. Williams was also effective on the boards.

On the other court Monday erratic play marked the contest between Ricketts and Ruddock. Ricketts completely frustrated Ruddock's offense during the middle part of the game while wearing out their slower opponents with fast breaks.

Ruddock got off to a fast start and led by 5 points at the end of the first quarter. Lack of conditioning and depth proved to be the undoing for the men in blue as Ricketts poured it on in the second and third periods and went on to win 50-34.

Potter led the victors in scoring, getting most of his points on 10-15 foot jump shots, while Ruddock, except for Barbosa, was unable to hit from there.

There was only one game played on Tuesday, and it turned out to be the closest game of the three. Dabney was certainly more impressive than Lloyd, but was able to win only 38-34.

The Darbs led most of the way by a few points, scoring crucial points every time Lloyd drew close. Two Lloyd injuries contributed to the outcome. Then when Vance fouled out in the last minute, Dabney took on the opposition with a 5-4 personal advantage.

Lloyd was the only team to shoot as high as 50 percent from the charity line. Ruddock was next with 44 percent, then Blacker with 42 percent, Page 40 percent, Ricketts 33 percent, and Dabney 24 percent. Overall the six teams made only 37 percent.

BLACKER	FG	FT-A	Pts.
Josephson	1	0-0	2
Tyler	8	1-2	17
Aschbacher	7	3-7	17
Pitcher	3	1-1	7
Brennan	0	0-2	0

Frosh All Wet

Now going into the second week of the season, the frosh baseball team has still not lost a game. Unfortunately they have not played a game either. The first two games against Biola were cancelled due to Biola's inability to put together a team. The next game against Rio Hondo and a league game against Redlands last Saturday were cancelled because of the rain. With the weatherman permitting, however, the frosh are scheduled to play at Whittier on Wednesday.

Drews	3	0-0	6
TOTALS	22	5-12	49

RICKETTS	FG	FT-A	Pts.
Potter	9	0-0	18
Frank	1	0-1	2
Dillehay	3	2-3	8
Miniscalco	1	0-0	2
Carlson	4	0-1	8
Fatner	6	0-1	12

TOTALS	24	2-6	50
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DABNEY	FG	FT-A	Pts.
Scott	6	0-6	12
Erickson	2	2-5	6
Elms	3	1-4	7
San Pietro	1	0-0	2
Zeller	5	1-2	11
Swatek	0	0-0	0

TOTALS	17	4-17	38
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PAGE	FG	FT-A	Pts.
Jubin	6	2-6	14
Goodmanson	5	1-3	11
Williams	4	1-2	9
Scandella	0	1-1	1
Trijonis	1	1-2	3
Pearlman	1	0-1	2
Dessinger	0	0-0	0

TOTALS	17	6-15	40
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RUDDOCK	FG	FT-A	Pts.
Overbeck	2	0-0	4
Barbosa	5	2-3	12
Thacker	3	1-4	7
Orr	2	0-1	4
Blumsack	3	1-1	7
Karlton	0	0-0	0
Dickinson	0	0-0	0

TOTALS	15	4-9	34
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LLOYD	FG	FT-A	Pts.
Hall	5	0-1	10
Vance	4	1-2	9
Ring	3	1-2	7
Landy	3	0-1	6
Sampson	0	1-1	1
Chan	0	1-1	1
Hayamazu	0	0-0	0

TOTALS	15	4-8	34
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Sailing Team Beats Stanford

Last Sunday the Caltech Sailing Team, otherwise known as the Wombat Wine, Women, Wind and Weather Society (their singing is atrocious) travelled to Marina Del Rey for the concluding regatta of the Spring Southern Series. With Don Radcliffe and Jim Brooks sailing in class A, and Dee Payne and Dave Hammond sailing in class S, the Wombat Wonders came in sixth out of a field of seven, defeating Stanford decisively. The Consistency Award this week goes to Radcliffe and Brooks, who finished first once and last four times in seven tries.

Tech's sixth place finish in this regatta clinches a sixth out of eleven for the entire series. The crew is now looking forward to the Berkeley Invitational this coming weekend, the Pacific Coast championships, and the eliminations for the national championships in the succeeding weeks. Everybody go up to Berkeley and watch them win.

Golfers Smash Pasadena College

The first of the Caltech athletes to venture outside after the rain last weekend were the golfers. They made their presence known, like good third-term seniors, by embarrassing Pasadena College 41-13 Monday afternoon.

Probably the leading candidate for the possessor of the most complicated scoring system in sports, golf requires some explanation. The golfers of each team are arranged in order of ability, exactly as in tennis, in order to match up the men from each team.

There are two types of competition — individual and pair —

again analogous to the more familiar sport of tennis. In the pair or "best ball" competition only the best ball of the team is counted. The scoring is identical in each type of competition.

Whoever wins the most holes out of the first nine is given two points and the loser gets to try again on the next nine; the situation of a tie is reckoned with by giving each participant, or team, one point.

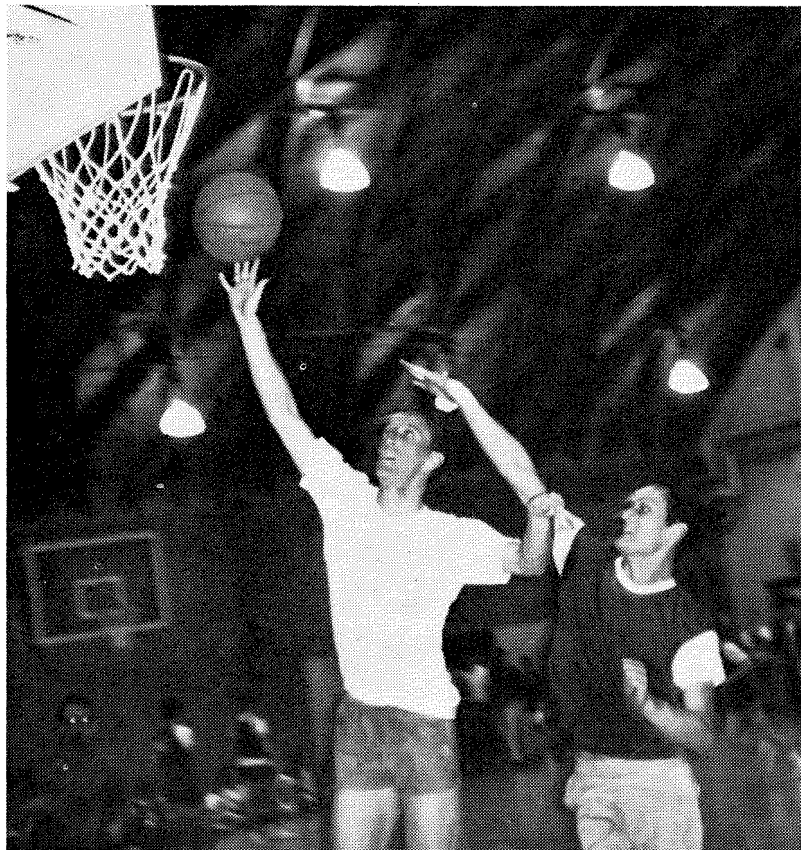
The winner of the second nine holes is awarded two points and the loser none. In addition, the winner of the most number of holes out of the total eighteen

holes is given the usual number of points.

There are therefore six possible points in each individual or best-ball match. For example, if there are six players on a team, the maximum possible total points is 54, 36 in the individual matches and 18 in the best-ball matches.

Beall was the medalist, an honor given to the player with the lowest score. Rounding out the team were Beamer, Davison, Colglazier, Hirschi, and Cassada.

The team won despite the jolt of having Vitz declared ineligible for academic reasons. His overall gpa last term was only a 2.4.



Dillehay (Ricketts) drives, while Barbosa (Ruddock) blocks in one of at least Monday's Interhouse basketball games. (Note Blair in the background where he can't foul out.)

Trophy Standings

INTERHOUSE			
House	Points		
Fleming	97½		
Page	75		
Ruddock	73½		
Blacker	61½		
Dabney	52½		
Ricketts	36		
Lloyd	24		

DISCOBOLUS			
House	Won	Lost	Points
Fleming	6	2	20
Blacker	3	3	12
Ruddock	3	2	11
Ricketts	3	2	11
Page	2	2	8
Dabney	1	3	6
Lloyd	0	4	4

Karate Club Demonstration Tomorrow

The Caltech Karate Club will present a demonstration of the basic techniques of karate tomorrow in the Gym. The show, starting at 3 p.m., will feature demonstrations of practice methods, fighting forms, and to please the crowd, board breaking.

Tsutomu Oshima, the club's instructor, will bring some of his black-belt students from other schools to enliven the demonstration. Oshima is a fifth dan (a fifth-level, super bitchin' black belt) and was the second man to spread karate knowledge outside of the Orient, when he came to the US in 1955.

The Caltech Karate Club is the oldest university karate club in the US so come on out and see them perform their bizarre art — maybe they'll break some bones for you.

Ricketts Defeats Dabney; Gains in Discobolus Race

Last Sunday Ricketts and Dabney waged a hard-fought volleyball battle for the possession of the Discobolus trophy. It was a close game all the way, with Ricketts finally coming out on top.

The teams consisted of Terry Smith, Tom Carlson, Maynard Olson, Pete Rumsey, Larry Dillehay, and Mike Baskes for Ricketts; and Jerry Yudelson, Jim Pearson, Don Blair, Len Erickson, Jack Comly, and Paul Swatek for Dabney.

Dabney started off strongly by getting five straight points. But then Ricketts swung into action and tied up the score. Then the serve changed hands several times while the score stayed at 5-5. But at this point Ricketts started making fewer mistakes than their opponents and was thereby able to take the next ten points.

In the second game Dabney showed good form and determination to go on to win. But with the chips down Ricketts showed itself to be the stronger team by winning the last game. Final score: 15-5, 6-15, 15-8 for Ricketts.

Fleming has already put in its challenge for the next match. They have challenged in swimming, basketball, and billiards-pool. Ricketts has decided to accept in basketball, and the game will probably be played this weekend.

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California Tech Product Of Sweat, Tears, Love

BY WALLY OLIVER

Faithfully every Thursday another grand and glorious issue of the *California Tech* is published. This is the story of the publishing of that issue.

The first job of the editor in charge of the next week's paper is to develop a list of possible news and feature articles to assign to the *Tech* staff. These assignments are given in journalism class on Thursday afternoon, with the understanding that the stories are due either Monday or Tuesday of the following week.

Typical examples of assignments are the covering of the Monday night lecture in Beckman, writing a story on some personality who is coming to campus, or reporting on that person's visit, or even finding out if the Institute wants to announce its new development program yet. At this time the feature editor might assign a story like "what new research is being done in the Chemistry Department."

Stop the Press!

The usual Monday night madness begins about 8 p.m. when the editor opens the *Tech* office. By this time the business manager has placed the national ads on the lay-out sheets. The size of the paper is determined by the amount of advertising in it. For instance, there is very little advertising this week; thus the paper is only four pages long while still losing over \$20. This kind of week is more than offset by profitable weeks.

On Monday night the editor waits around until the stories

come filtering in, usually late in the evening. The copy must be proofread and an estimate must be made of the length in column-inches. If the amount of assigned stories do not fill the paper, the editor must find someone to do fill stories, which are usually re-writes of News Bureau releases. The sports pages are handled exclusively by the sports editor, who is responsible for getting people to write the sports stories and for laying out his pages.

Laying Out the Tech

When all possible copy has come in on Monday, either the managing editor (if there is one) or the editor-in-chief must fit the copy onto the lay-out sheets. The criteria for this is to put the most important news story as the lead with the lesser news stories filling the rest of the front page.

The second page is reserved for editorials, letters, columns, and serious feature stories. The remaining pages, excluding the sports, are filled with random feature articles.

The final job of the night, which may at this time be 2 a.m., is writing the headlines. They must fit the space available, as determined by the number of headlines and the size of the type style.

The whole mess of copy, lay-out sheets, and ad plates are then neatly bundled and sent to the printers, the Bickley Printing Company. At this time, 2 to 4 a.m., the tired and sleepy editor falls into bed dreading that 9 o'clock he must get up for in the morning.

(Continued next week)

Fellowships

(Continued from page 1)

then receives a traineeship from his university instead of winning a fellowship in national competition. Caltech has been awarded 37 traineeships for study in the next year.

Additional Fellowships

Other fellowships already awarded or soon to be awarded are Woodrow Wilson, AEC, Fullbright, National Defence Education Act, and Public Health Service fellowships. There are also 786 traineeships from the National Aeronautics and Space Administration. Fifteen students have been awarded NASA traineeships to Caltech.

The Woodrow Wilson fellowships include a donation of \$2500 extra each year for each student. The money might be given to the student in his second year or it could be lumped together to provide a basis for a summer program of research, as is often done at Caltech.

There are also the Guggenheim fellowships. These, however, are awarded for post-doctorate study.

Student wishing to apply now for fellowships are either too late or too early. The time to find out more about fellowships is in the beginning of first term, when Dr. H. F. Bohnenblust, Dean of Graduate Studies, gives his annual lecture.

Caltech Faculty Receive Sloan Research Grant

Four Caltech faculty members are among the 91 young scientists chosen to receive unrestricted grants for basic research, the Alfred P. Sloan Foundation announced today. They are Drs. Fred C. Anson, Sunney I. Chan, Alan T. Moffet, and Hugh P. Taylor. For a two-year period starting next September, the selected scholars will be free to choose the scientific problems which they wish to investigate, and to change or modify their programs.

Anson, associate professor of analytical chemistry, is studying the little-understood chemical changes produced by the flow of electric currents through solutions. Chan, an associate professor of chemical physics, is investigating the interacting forces of molecules in gases and liquids.

Moffet, a research fellow in radio astronomy, is mapping the structures of celestial sources that emit radio energy. Taylor, associate professor of geology, is investigating the forces and temperatures involved in the formation of rocks.

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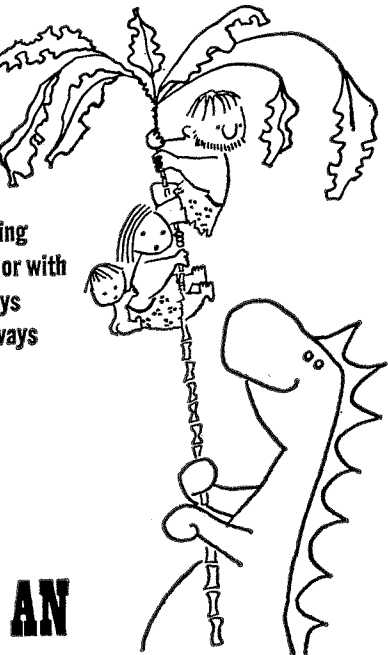
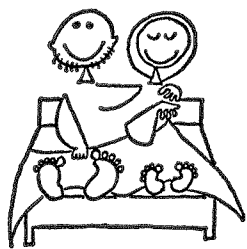
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