The Valkeries are better

CaliforniaTech

Associated Students of the California Institute of Technology

Than the Viet Cong

Volume LXVII.

Pasadena, California, Thursday, March 10, 1966

Number 21

Three Seniors Win Fellowship

by Jeff Hecht

Three Caltech seniors, Tim Stephens, David Posner, and Jerry Yudelson, were recently awarded felowships. Stephens was the recipient of a Woodrow Wilson Fellowship, Posner was chosen to participate in the sixth Summer Exchange of American and Soviet Students, and Yudelson was the recipient of a Rotary Foundation Fellowship for International Understanding.

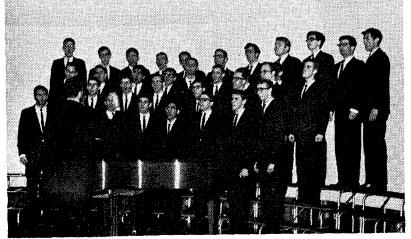
Tim Stephens is one of 1,408 students selected as Woodrow Wilson Fellows. These fellowships are intended to enable the recipients to continue through graduate school to the Ph.D. level and then enter teaching. Fellows get the Foundation's funds for one academic year of graduate education, and a living stipend of \$2,000. The vast majority of those selected, over 80 per cent, are majors in the humanities and social sciences. Two other Techmen, Stu Galley and Mike Aschbacher, were given honorable mention.

Posner in Russia

Posner in Russia

Posner is among twelve students selected by the National Student Councils of the YMCA and YWCA to participate in the sixth Summer Exchange of American and Soviet Students. He will leave for a ten-week trip to the U.S.S.R. and other Eastern European countries shortly after graduation. This trip is under the supervision and approval of the State Department. group will visit Russian universities and participate in a Russian young people's sports camp sponsored by the Kiev Technical In-

Yudelson was selected for the fellowship by the San Fernando Valley district of Rotary International. Rotary Foundation funds will pay all his expenses. He plans to study next year at the Technical University in Aachen, Germany.



Blacker House, in Blacker House jackets and directed by Blacker Dan Nemzer, won the InterBlacker Sing Saturday for the third time in a row.

Rafferty Urges Individualism for **Cure of Progressive Education**

by Firestone

"Rafferty Deemed Textual Deviate" and "Rafferty to Fly over Salem on Halloween" are some of the greetings he has received, but Dr. Max Rafferty, State Superintendent of Public Instruction in California, found a much less hostile audience listening to him last Thursday night in Beckman Auditorium. Brought to Caltech by the Young Republicans, Rafferty spoke on "Education — the Storm Center."

Rafferty compared a bee hive to human society. He stated that when a mutated bee joins the hive, he is destroyed whether the mutation is beneficial or determental. Rafferty claimed that this is due to strong evolutionary forces which, he contended, also exist in human society and are being helped along by too many modern educators.

Decrying so-called "progressive education," he capsuled today's philosophy as "everything changes, so adjust, adjust." This, he said, "is precisely what's wrong with the country today."

Rafferty stated that there was a genuine case for the student demonstrations at Berkeley: loss of individuality. These students are revolting against groupism, he said. Later under questioning Rafferty claimed that there was no free speech issue at all at Berkeley, just a question of individuality.

Up individualism

As a specific example of the value of individualism, Rafferty cited how the Irish came to this country as one of the most persecuted nationalities at a time individuality was being taught in the schools. Because of this teaching, the Irish convinced the country to think of them as individuals rather than a group, and they have progressed to a pointed where one was President tnree years ago. Rafferty thought this to be the key to the problem of Negro subordination.

He cited three methods to remedy the present situation. First, insist on an educational philosophy of individualism. Second, upgrade vocational opportunities such as adult education. Third and last, support politically those people that stress individualism.

Specifics

Although most of the talk stayed away from politics and specific educational policies (there were only two notable references to Governor Brown), Rafferty did cite some of his policies at the end of the speech. He is very much against teaching "leadership" along with such vague courses as "senior problems." He favored more specific subjects such as economics and geography, and claimed there are very many bad textbooks, specifically stating that

Rudds Cap Quartet

Blacker Wins Sing For Third Time

Blacker House walked away with the first place Trophy for the third year in a row, while the Quartet Trophy was returned to Ruddock once again at the Interhouse Sing Competition last Saturday night at Beckman Auditorium.

The Blacker chorus, directed by Dan Nemzer, was accorded first place by the unanimous vote of the three judges after its performance of Viadana's "Exultate Justi," L. Pfautch's humorous arrangement of "Jack and Jill," and Sigmund Romberg's stirring "Stout-hearted Men" from Sweethearts.

Four-vectors

The Ruddock four of Mike Henerey, Stu Galley, Terry Bruns, and Bill Broste swept the Quartet competition unanimously with "How To Handle a Woman" from Lerner and Lowe's Camelot, George Preston's "Limburger Sandwich," and a delightfully staged rendition of "The Whiffenpoof Song".

Ricketts House took a close second in the choral competition singing "Misere Mei" by Antonio Lotto and Brahms' "How Lovely is Thy Dwelling Place," under the direction of Chris Shelton. Stacy Langton led Dabney to third place with "Hey Look Me Over" from Cy Coleman's Wildcat, "Thanks Be to Thee" by the favorite composer of the evening, George Handel, and "Joshua Fit The Battle of Jericho".

Fourth went to Page which performed "Chorus of Men" from The Milkado and "Pilgrims' Chorus" from Wagner's Tannhauser, under the direction of Ken Nordsieck. Ruddock, directed by Stu Galley, came in fifth with "Hallelujah Amen" from Judas Maccabeus (Handel strikes again). This was followed by Pete Seeger's "Turn, Turn, Turn" accompanied by guitars and finally "On the Great Lone Hills" from Sibelius' Finlandia. Gordy Myers direct-

with "Do Re Mi" from Rodgers and Hammerstein's Sound of Music and "Troll's Progress" with the words of Dr. J. Kent Clark, which the audience thoroughly enjoyed.

Flue takes toll

Influenza decimated the Quartet competition, eliminating Page's entry and knocking Richard Drews out of the Blacker entry. In addition, Marshall Schor did not perform as Blacker planned. Upholding the tradition that "the show must go on" despite the unkind blows of fate, Ben Cooper, Robert Miller, Steve Clamage, and Greg Bourque appeared for Blacker.

Professor J. Kent Clark, Master of Ceremonies, started the show on a light-hearted note with his descriptions of the great abundance of musical talent on the campus and tales of events "contrary to all antecedent probabilities."

Scrippsies a-go-go

The Caltech-Scripps Singers provided a musical interlude of madrigals betwen the chorus and quartet competitions. Their selections included John Farmer's "Fair Phyliss I Saw," John Wilbye's "Adieu Sweet Amarillis," and Tomas Morley's "April Is In My Mistress' face."

The Caltech Glee Club rounded out the program following the quartets with a Hawaiian number, "Hanohano Hanalie," by Alfred Alokea; "The Lord Is A Man of War," from Israel in Egypt, another Handel composition, and "In That New Jerusalem," arranged by De Cormeir. The program ended with the singing of the Alma Mater.

After the competition ended many of the couples attended a gala fling sponsored by the IHC, while Blacker and Ruddock men went to celebrations of their own and others turned to finals.

Notices

"THE DISCIPLINED CHRISTIAN MIND"

will be explained by Tom Erickson tomorrow noon in the Gretsy at the meeting of the Caltech Christian Fellowship. Erickson hails from the Evangelical Covenant Church in Los Angeles.

TO LIFE"

"CHRIST IS NO STRANGER

Planning your spring vacation? Plan to attend the weekend spring conference of Inter-Varsity Christian Fellowship for the Los Angeles

Area, March 18-20 at camp Cedar-

crest in the San Bernardino Mountains. Warner Hutchinson, Eastern Director of IVCF, will speak on "Christ Is No Stranger to Life" as background for discussions in an informal atmosphere on the fundamentals of the Christian faith. Please contact Bruce Baillie in Blacker for further information and travel arrangements.

ALL FROSH!

Please be sure to return the soph history form to Dr. Kevles by this Friday, March 11.

(Continued on page 2)

Saucer Hits Caltech

by Parker

A few minutes after nine p.m. last Monday evening, Blacker House senior Dave Sherlock was walking down the olive walk toward his House when he saw a bright orange light about 15 degrees above the Athenaeum moving to the south. He ran over to the Athenaeum lawn and watched the orange light, which he described as four to five times the brightness of Venus, and big enough to be resolved as a disk, move slowly to the south. It was apparently two miles or so away from Tech, and out over San Marino.

At this time he saw the clearance lights and heard the engine of a light plane, which was out

about four or five miles, moving south-west toward the apparent. position of the orange UFO, at about the same apparent height.

As the plane got close to the orange light, the light suddenly got much brighter and turned yellowish, and then disappeared with a trace. The light plane continued on its way.

While no one saw the UFO besides Sherlock, he has done accurate reporting on these events before, such as the great meteor of last year. His only explanation for the occurrence was that it could have been an orange flare of a balloon, of the type launched by airports. But there is no airport northeast of Tech.

(Continued on page 6)

Editorial

From Halls of Montezuma...

In seemingly all aspects, the newly independent country of Nigeria had a good chance to develop into a democratic, Western-oriented, capitalistic nation. It appeared to be one of the few justifications for European imperialism in Africa; whatever harm was done in the Congo, was redeemed by the progress instilled in Nigeria.

Sure, Nigeria had its tribal and religious problems: Moslems in the North hated Southerners, the Easterners accused the Westerners, justly, of rigging their elections. But its government, up until a few days ago, was a parliamentary democracy, its economy was on a sound foundation, and its foreign policy was moderate. Nigeria was a former colony with fewer problems than most.

Now, however, the military has seized control, and although it may be careful in its exercise of power, democratic tradition has been lost. It might not be so important that democratic continuity had been interrupted if Nigeria were surrounded by sable states; in reality the opposite is the case. It will be difficult to regain what has been lost or even retain what has so far been preserved in an atmosphere of chaotic coups such as Ghana has just experienced.

So the liberals mourn the loss of Nigeria. A more cynical approach might also be in order, though. We Americans constantly assume that our form of government, obviously the most desirable there is, can be instituted everywhere. If a nation with all the advantages of Nigeria fails to pass the test of democracy, how obvious is it that Vietnam can? ..Or Burma?

-Michael Meo

Org

Those seething abominations which plague mankind, causing surfeit, despair, revulseion and revolting sentiments to well up in the mortal breasts of condemned souls: those terrifying, beastly, petrifying and mentally putrifying aspects of bourgeois prestige delineation come inevitably, irrevocably, and unequivocatingly when the earth passes three of the four corners of its seasonal orb, the fourth just as disgustingly signifying the end of our seasonal despite.

In other words:

Finals are waking up the whole House at 3 a.m. screaming "Math Bites!"

Finals are a slippery crock with no handles. Finals are when someone flushes the toilet of life.

-John Shrdlu

BOD Doings of the Week

The BOD met Monday night and had several announcements and decisions which should be of interest to random Teckers. Bob Berry was appointed the new California Tech business manager, but the Big T business manager application deadline was extended to April 4.

Other BOD business included a Zerox machine in the YMCA workroom, a speed-reading course, and related equipment on campus, and the destination of

The BOD met Monday night and had several announcements and decisions which should be of terest to random Teckers. Bob terry was appointed the pay.

The Blood Drive will be April 15; you'll soon hear more about this. As a final note, ASCIT will pay half the costs of two Tech participants in the Oxy Conference, to be held March 19-22; for more information about this nation-wide conference contact Fred Lamb.

Note Notices

(Continued from page 1)

GAIN INFINITE POWER

The IHC is in need of qualified applicants for Secretary for next year. Apply to your friendly House president before the end of the term.

BIG T ADS

can be placed in the yearbook now. See George Sharman, 72 Fleming.

PREHISTORIC MAN A FRAUD!

Dr. Leaky, a scientist who is famous for his discovery of sub-humanoid remains dating back some millions of years, will give a lecture on his discoveries at 4:00 p.m., March 15, in Beckman Auditorium.

FOR THOSE WHO REALLY

want to punt, Beckman Auditorium will host "An Evening with Agnes Moorehead," Saturday, March 12, just at the beginning of Finals Week. Miss Moorehead is a star of stage, screen, and television, currently appears on the show "Bewitched." Curtain time is 8:30

Art Museum to Hold Concerts

Encounters 1966, a series of events spotlighting twentieth-century music, was initiated this week by the Pasadena Art Museum with the music of avantgarde pianist Morton Feldman. The series will include performances of widely varying musical tastes from now until June 12, when it will be concluded.

The next performance will be Sunday, March 20, when the music of Morton Subotnick will be presented. The program will include visual projections along with "electronic" music from "Danton's Death." Subotnick is the founder of the Mills College Performing Group along with being a well-known contemporary composer.

On Wednesday, April 27, the music of composer, pianist and conductor Karl John will be presented. John has been the recipient of Fulbright and Guggenheim grants for composition and in 1965 his "Three Scenes" was performed by the Los Angeles

Philharmonic Orchestra under a Rockefeller grant. He will be playing the piano at this concert.

The music of Charles Ives (1874-1954) will be performed Monday, May 16. As part of the museum's policy of commemorating one twentieth-century composer a year, Ives was chosen as "the foremost pioneer of modern American music (and) one of the most original creators of this century."

Changes to jazz

Don Ellis and his Ensemble will headline the program Sunday, June 12, when the musical mood switches to jazz. Ellis concentrates on combining jazz and classical music and has become one of the leaders in the "third stream," as it is called. He recently performed and recorded as jazz trumpet soloist

(Continued on page 5)

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* AUDIENCE

The Caltech Drama Club played to a tremedous audience of three last Thursday evening in Culbertson, putting on a well-staged reading of Garson Kanin's Born Yesterday. Although the entire Caltech Community, whatever that is, was invited to the reading, only three Teckers (and one of them was your friendly reviewer) were interested enough to show up. This was a shame, as the reading was well done.

Evans a junkie

Playing the leading male role of Harry Brock, junk magnate (junk as in scrap iron) was an ex-Tecker, J. K. Evans. This role must have been created for Evans, for he plays a loud, uncouth, uneducated troll who feels anyone can be bought and walked over. Opposite him in the female lead of Billie Dawn was Helen Peters. Miss Peters plays a somewhat illiterate ex-chorus girl who is merely living with Brock. Though she had a hard time warming up to the empty hall, she was magnificent in the third act. She also has the unnerving habit of smiling at the audience whenever she is not being involved in the action on the stage; I guess this is something one must get used to, but it certainly bothered your reviewer for a while.

by Parker

The good guy, Paul Verrall, a reporter for a magazine (or so I gathered), is played very well by Jay Romney. Contrary to last week's Tech, Mr. Romney does not quite get seduced in this one, although he comes perilously close. Filling two minor roles of maid and wife of Senator Hedges, the bought legislator, was Tina Carter, who did a very convincing job in both roles. Tina is what we might term an honorary Tecker, as she is a veteran of several drama club performances. Her husband, Senator Hedges, played well by Bill Inwood. The rest of the cast included Ed Devery, playing attorney, and Steve Bissell, who played Brock's right-hand man, Eddie.

Reminders

The Drama Club reminds Teckers that the ASCIT play will be held late in May, that tryouts will be the first week of next term, and that all are invited to participate in the play and to attend when it is produced. This reviewer would like to urge support also. These people do a great job, and are surely worth the couple of hours it takes away from snaking to come out and watch their plays.



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FESTIVAL

Horney Techmen to **Appeal to Computer**

"Blind" dates are obsolete since Operation Match has come to the Los Angeles area. With the help of a questionnaire and an IBM 7090, a student can now "pick" his ideal date from hundreds of thousands of other persons on file with Operation Match. Not a so-called "marriage agency," Operation Match is designed specifically "to remove the obstacle of incompatibility from college

The start

Approximately a year ago Operation Match got started as an undergraduate thesis for Jeff Tarr, a sociology student at Harvard. He and Vaughan Morrill gathered up \$1250, wrote the first questionnaire, and started the project among 8000 students in 100 New England colleges. Since then a new corporation, Compatability Research Institute (CRI), has been formed. Also, the questionnaire has gone through its second revision, and the computer program has been vastly improved. Today Operation Match is to be found in 50 cities throughout the United States, and in Great Britain and Canada.

An Ideal toy

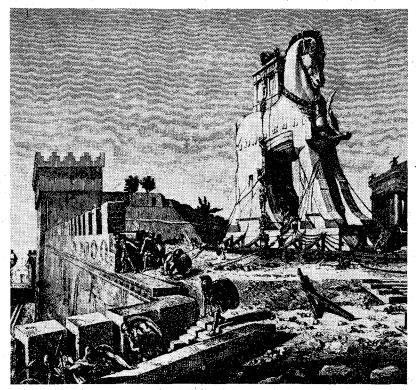
John Black of Claremont Men's College and Kenneth Herman of UCLA, newly appointed representatives of the Los Angeles area, are now disseminating materials to local colleges. Questionnaires containing 105 multiple choice questions have been spread throughout the campus. To become part of Operation Match, all a Tecker has to do is answer the questions and send in the answer sheet with the \$3 fee. His vital statistics will be compared with those of every female responder from this area on file at CRI. Soon he will receive a list containing at least five matches—ideal dates for whom he is their ideal.

Pseudo-intellectuals

There is a good chance that any responder will receive many more than five matches. One girl was matched with 112 boys, and during the following summer her house was besieged with callers. The record belongs to one Cornell man who was the ideal mate for 263 women; upon going to a party at Wellesley he had his pick of over 150 girls.

The matches have quality as well as quantity as Joan Held, a sophomore at Northwestern, will testify; her fourth match, Larry Tidrick, a senior at Depauw University, will soon be her husband. Also, one Harvard astronomy major and varsity swimmer wanted a girl who would time his swims and get up at 3 a.m. to watch comets. CRI's computer clicked out a perfect matcha Radcliffe girl who was "fed up with pseudo-intellectuals." They are now going steady.

Operation Match does not plan to quit here. Plans for future expansion include the possibility of "Real-Time," where teletype keyboards placed on various campuses would provide instant matches. Other plans in the works include Match Magazine, an Operation Match Discount Privilege Card which would enable students to get national products at lower prices, and services to manufacturers aiming at the college market.



Unidentified flying object photographed last night on the Athenaeum lawn. Little green men are in the act of taking over the world.

Houses Complete Elections Blacker Acclaims House O

The student Houses finished their electioneering for the year as the remaining their-and-a-half decided on their new officers. Blacker elected only half of its offices Monday night, as the other half had been elected the week before. Blacker's new vicepresident is Terry Allen, who was victorious over Terrill Hendrickson and Bob Miller. The team of Rich Drews, Mark Ra-domski and Greg Wright defeated the team of Jeff Hecht, George Jackson and Jim Leininger for social chairmen. Running, and winning, for the office of librarian was the team of Gavien Miyata and John Williams. Running and losing, separately, were David Erlich and Joseph Feng. Elected by acclamation as House O was R. E. Serafin.

Lloyd culminated its week of campaigning by electing Bob Piccioni as president, unopposed. Gray Jennings defeated George Balanis and Farriel Hinkle for the vice-presidency, Gary Berman bested Les Fishbone for House secretary, and Doug Osheroff came out on top over Bill Sampson for control of the money. Social chairmen and athletic managers were unopposed with the team of Mike Decker, Bob Dukelow and Norm Whitely

taking over the fun while Bob Vance and Jim Woodhead took the games.

Tony Gharrett became president of Ricketts Sunday night while Pete Cross knocked off Tom Bostick for the vice-presidency. For secretary it was Burt Marsh over Eric Wickstrom and the new treasurer is Chris Dede, who beat Tom Soifer. The team of Pete Bloomfield, Howard Hoffman and Bob Matteyses captured the social vice-president's spot by defeating Doug Eaton, Mike Fredman and Dick Landy. The atheltic managers are Ed Rehbein, Dick Russell and Gus Schultz.

Buttock dynasty

Ruddock has had the new dynasty in power for a week now, and its leader is Greg Shuptrine, defeating Rob Dickinson. Norton Greenfeld is the new vicepresident and Les Fettig is the new secretary. Mike Wolf defeated Dick Harley and Ed Seguine for the treasurer's position while John McCord came out ahead of Gary Cable and Ed Kort for the librarian spot. Jay Chapyak and Erno Daniel became athletic managers with no opposition and Mike Henerey, Mike MacLeod and Gary Stonum will take over the social program.

Velikovsky vs. The Bigwigs; Will He Win?

Who, in 1963, predicted that it would be found that the planet Jupiter emits radio signals, a fact discovered in 1955? Who, in 1956, concluded that there was a magnetosphere reaching from the earth to the moon, a fact discovered in 1958 by Van Allen? Who, in 1950, declared Venus to be an extremely hot planet when it was generally accepted to be slightly higher than than of the earth? (In 1961, JPL announced that Mariner II established the temperature of Venus at 600 degrees Kelvin).

You haven't figured it out yet? All by his lonesome

It is Dr. Immanuel Velikovsky. Velikovsky is the author of numerous scientific prognositacations of which many, if not all, have been confirmed. Yet, he has done it without developing scienctific theories, without reading a copy of Feynman and generally without leaving the comforting confines of his home or office.

This is why Velikovsky has attained a great deal of notoriety in the scientific community. Velikovsky's first book Worlds in Collision brought criticism with what the American Behavorial Scientist said amounted to an inquisition.

Censorship

In the same year and in response to Velikovsky's book, the American Association for the Advancement of Science proposed that any publication that presents new scientific hypotheses should not be allowed to be printed without the approval of a proper professional body.

Although the book turned out to be a best-seller for MacMillan Company, they ultimately sold the right to the book because the scientific community boycotted their textbook department.

The theory that has brought on the largest attack, involves the formation of the planet Venus and some other interesting ramifications.

Jupiter ejects

Basically the theory says that about 1500 B.C. the planet Jupiter threw off a great body with a mass close to that of the earth, something like a comet. This body ultimately went into orbit as the planet Venus. But the excitement happened in between.

First, the comet passed extremely close to the earth, showered it with meteorites and (Continued on page 6)

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Plan Another Creative Workshop

For those who missed the Scripps Conference or wished it had lasted longer, here is a chance to go to a gathering with many characteristics similar to the February meeting.

The Caltech YMCA is organizing a "Creativity Conference" to be held from Thursday afternoon, April 7 to Sunday, April 10, at the Firestone Boy Scout Reservation, the place where the Scripps Conference "happened". The cost will be \$20 per person. Five-dollar scholarship are available for those who need financial

This workshop will be very as a follow-up to the Scripps Conference. Dr. Weir, organizer of the conference, says about its purpose: " . . . It will be an experimental workshop designed to focus attention on the nature of the creative process—what it is, what makes it go, and what blocks it. The program can properly be called a 'workshop' as the activities will be centered around each participant experiencing and then examining different kinds of creative processes and acts-rather than talking about someone else's experience.

at the ICE HOUSE (S)

"This will not be a workshop in artistic productivity. The esthetic and/or functional value of the paintings, sculpture, poetry, and problem solutions that will be produced is irrevelant to the goals of the workshop, except insofar as they may provide the participant with further insight into his own creative potential. Rather, the focus of attenion will be on the processes of creation." Get satisfaction

People who went last year can testify to the satisfaction, fun, and self-insight which they got from the workshop. This year, as last, psychologists from the Western Behavioral Sciences Institute will conduct the conference together with Dr. and Mrs. Weir. Plans include space for 75 people, evenly distributed sexually, plus some faculty. They will be split into small groups to concentrate on their creativity.

Those interested may sign up at the Y, starting today. A few people might possibly be allowed to bring a girl to the program.



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TECK DONTS

Baseballers Win First Over BIOLA

The baseball team won. No, there was nothing flukey about the game, except an overwhelming hitting attack that whacked out eleven runs, a fine mound performance that allowed only one run, and a defense as good as it's been all year, committing only three miscues.

Perhaps answer should be made to those cynics who point out the fact that the contest shrunk to four innings because of darkness as the tail-end of the Biola doubleheader. This only points up a very vital improvement in the overall team effort in the hiting department. In their sxith game of the practice season, the horsehiders clicked in a big way for those 11 runs in just four innings. "Stump" Chapyak waddled out two triples and managed to cross the plate three times, while Dan Hammons pumped up his batting to a ridiculous .471 with two hits.

As big a treat for the then-apprehensive coaching staff, who watched a 6-5 squeaker slip by for the team's fifth consecutive loss in the first game, was John Frazzini's four-inning stint in his fight with the ragarm blues. Bob Firetsone spent the game at first base, leaving his rightfield playground, but was able to keep himself pretty much out of the way; he made no putouts or assists, yet was able to scrape an error out of the innings to compile a glittering fielding average. Fittingly, Frazzini was credited with the abbreviated victory, evening his preseason record at

This, the second game of the set deprived the bevy of perfumed, skirted fans from witnessing one of the fabled late-inn-Caltech collapses. Nevertheless, their presence and feminine squeals were enough to unnerve the just-arrived Beavers before they managed a feel for the place. The first inning saw Craig "Hard Luuck" Helberg start off to his third consecutive loss as Gran'ma Paine booted his first of three; Helberg chipped in by plunking the next two batters. (By the end of the game, he had upped to five the number of notches in his glove for the the atmosphere after letting in 3 runs in the first and settled to play a solid ballgame after that.

Tom Resney poled a 330-plus foot shot over the left field fence to shove a pair of runs across, with Hammons knocking another two-base rip.

Overall, the baseballers put on a solid performance for the day, and prospects for a potent offense brightened considerably the display of batwork. This represented a much-needed pickup over the 11-6 drubbing rubbed in by Pasadena College last Wednesday at TP.

Helberg aagin was the starter and loser, followed on the hill by Chapyak and Fettig. Incensed over snide comments drifting from the Pasadena bench while he took his warm-up pitches ("Hey, who cut off his legs???), Jay reared back and worked two superb innings, allowing just one hit and striking out three. The Nazarenes bit their last two runs off Fettig who mopped up the final three frames, about his only positive contribution for the day.

Today the horsehilders are at Azusa-Pacific, playing before another audience of coeds, after yesterday's win over Biola at home. Fine things are coming up on the diamond this year.

Ricketts Wins, Lloyd Loses

Ricketts defeated Lloyd in Discobolus backetball by a score of 27-23 in a Sunday game. The first half was marked by cold shooting, and the only field goals were three buckets by Larry Dillehay of Ricketts. The Scurvs led at halftime by what was probably a record low score, 9-2.

Lloyd came back with two quick scores, but three baskets resulting from steals by Ira Herskowitz helped move Ricketts into a 21-8 lead. Lloyd fought back in the fourth quarter, but could not overcome the large Scurv lead.

Frank Potter and Ed Rehbein were impressive on the boards and in keeping Grey Jennings and Les Fishbone to only nine points. Bth sides played very hard as shown by the 29 fouls committed in the game.

Fleming will be the next house to challenge, but it will have to wait until next term.

Editors' notice: We regreat to announce that there will not be an issue of the California Tech next week. This announcement is made in order to fill this space. Thanks

Below are the final stats for the basketball season, showing the points scored, field goals, and free throws. Terry Bruns led the team in almost all departments; he came in ninth in the conference in scoring and fifth in rebounding.

FINAL BASKETBALL STATS

Name	Game	s G.A.	G.M.	%	FTA	FTM	%	Points	Ave.
Terry Bruns	21	264	127	48	164	102	62	356	15.5
Jerry Yudelson	21	210	70	33	157	92	59	232	11.5
Jim Stanley	21	217	77	35	101	57	56	211	10.5
Jim Pearson	10	129	53	41	52	35	67	141	14.1
Ed Hsi	21	144	53	37	43	27	63	133	6.4
Doug Holland	17	117	32	27	39	30	77	94	5.6
Don Blair	20	68	28	41	47	29	62	85	4.3
John Tucker	13	82	26	32	43	27	63	79	6.1



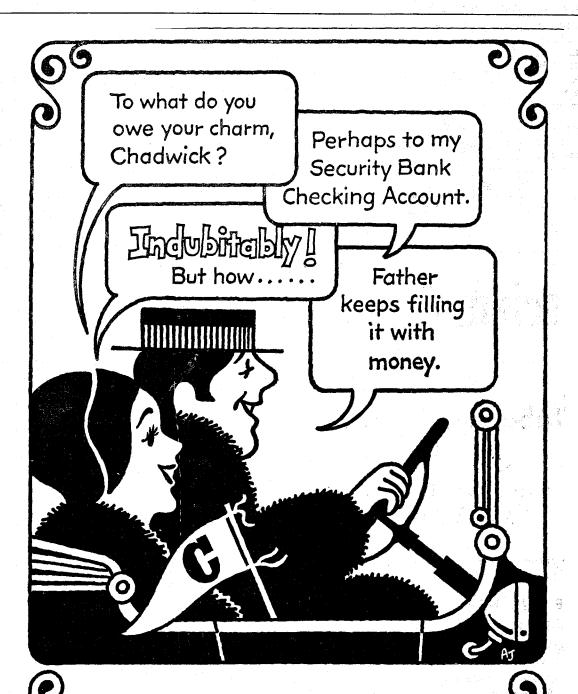
Frazzini throws one of the pitches that helped win the Biola game.

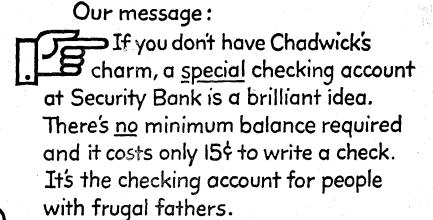
Webmen Lose to Champion CHM

Caltech met Claremont-Mudd in their first SCIAC dual swim meet of the season on Friday. Unfortunately, the start was not a happy one, as the Webmen lost 71 to 24. CHM, the champions of this year's league relays, allowed Tech only two first places. Larry Anderson won the 50-yd. freestyle in 23.8 second and then came back in the 100 to touch out Johnston of CHM in 52.1 for second behind Henry DeWitt of Tech. DeWitt's time was 51.8

CHM dominated the meet from the start by taking the medley relay in league-record time of 3:58.7. Frosh Greg Wright, who has been swimming well all year and already holds one school record and a share of another, lost two close decisions to CHM's Chip Hardinge in the 200-yd. backstroke and the 200 Individual medley. In each case Hardinge beat Wright by only eighttenths of a second.

With their toughest meet just finished, the Webmen, with a good shot at second place, should do much better in the league meets to come next term.





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Cross Sets Two Records

Caltech lost a close track meet events and the sprints. Dennis to Pomona 78-60, but the Beaver distance runners outdid themselves in coming through with fine performances. Pete Cross broke the Caltech mile and twomile records during the dual meet. His time of 4:21.0 in the mile broke the record set by Emmerling in 1957 (4:22.7). Running more than 50 yards ahead of his competition, he had to sprint his last 440 and was clocked in 62.2 for the lap. After such an outstanding performance in the mile, Cross surprised everybody by setting a blistering place in the two-mile. Informed at the end of the seventh lap that he was on another record-breaking run, Pete sprinted the last lap and was clocked in 9:40.0. Caltech's Lane Mason was right on his heals with a 9:53.0, which is a new Tech frosh record. The official tmer for the event was a Mr. Mason (no relation to Lane), who set the old two-mile record of 9:46.6 in 1951.

In the final standings Pomona won on its strength in the field

Schneringer, who has been one of the most cosistent runners for Coach LaBrucherie, came through wth another fine performances in the 880, winning in 1:58.9. Gus Schultz, another of the fine crop of frosh, finished first in the 120 yd. high hurdles. Tony Gharrett, with the best throw of his life, came in second in the javelin with a distance of 162 ft. 8 in.

Jim Stanley, running in his first meet of the season, placed second in the 440 with a time of 51.5. Frehman John Cummings looked strong in the 440 intermedate hurdles but was nipped by Pete Wyatt at the wire (57.9).

This Thursday Caltech hosts Pasadena College and Biola in a triple-dual meet. The events will start at 3:00 p.m.

Tennis Season Poor

In a rapid fire series of matches timed to beat the final exam deadline the Caltech Varsity tennis team had successive losses to Oxy 7-1, Whittier 8-1, Pasadena City College 72, and Pomona 9-0. The team will retire to lick its wounds during exams and then try again as the second nalf of the season rolls arounds At present we have not won a league match and things look dm for the ffuture. Dave Lischinsky has the best won lost record playing numebr six and the team of Buckholtz and Pressing consistently give their opponents the toughest match playing second doubles.

The frosh team has had a similar series of defeats but in each match a Caltech man has been able to defeat his opponent. Martin Frost defeated his Oxy and Whittier opponents and Bill Fertig was also victorious against Whittier.

Rugby Explained

As a few readers may have noticed, there have, in the past few weeks, appeared in the California Tech several articles about the Caltech rugby team. If you were one of those who read the articles, you were probably mistified by this foreign game. There is going to be a game played at Caltech today at 3:00 p.m., so anyone interested in going my find this article helpful in explaining the game.

The team

A rugby team consists of 15 players. Usually they are divided into eight forwards and seven backs. The first row of three forwards consists of one prop on each end and a hooker in the middle. This can be compared to the guards and center in American football. The second row is made up of a breakaway on each end pushing in at an angle, with two second row forwards in the middle. They are like ends and tackles and provide most of the forward thrust in the scrum (to be explained later). The final row is the number eight who can best be compared to a linebacker.

The back who stays near the scrum and receives the ball is the scrum-half and has duties similar to the split-T quarterback. Angling back from the scrum are the standoff, the inside center, the outside center. and the right and left wings. They are all like halfbacks, while the rugby fullback is like a safety.

The play

The idea of the game is to move the ball over the goal line or to kick it through the uprights, similar to football. The ball may be carried, kicked, or lateraled, but no forward passes are allowed. The backs usually try to lateral the ball from one to another, moving it out to the wing, who tries to run around the opposition or kick the ball to a more advantageous position. Kicking and position play very important parts of the game. Unlike in American football, anyone may handle the ball, though usually the backs are the ones who do all of the running. When tackled, the runners has to release the ball, and play continues from there. The only stops are for penalities or after scores.

Scoring

Scoring is done in several ways. When a player touches the ball down in the opposition's endzone, it is called a try and counts for three points. After each try a conversion attempt is made, but it has to be made from a point directly behind the spot where the ball was touched

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This counts for two points. (Touching the ball down in your own endzone does not score for the other team) Finally, drop-kicking the ball through the upright during the regular course of the game or a penalty kick also count three points.

There are two special "formations" which are used in rugby, the scrum and the lineout. The scrum takes place after minor infractions of the rules. The forwards interlock arms and shoulders and push against a similar pack of opposing forwards. The ball is dropped into the middle of the scrum, and the forwards try to "hook" the ball back with their feet to the scrum half so the play can start.

The lineout is an in-bounds play. The two sets of forwards line up in two lines perpendicular to the out-of-bounds line. The ball is thrown down the middle, and again the forwards try to get the ball back to the scrum half.

Hopefully this explanation has cleared up some things. If you are interested in playing or just watching, come out to the game and talk to the rugby players. They are even almost human.

IH Volleyball

The volleyball season has finished another week, and the results have been what was expected, with one major exception. Lloyd, having come along nicely all season, upset Fleming in two very tight games. After blowing an 11-1 lead in the first game, Lloyd came back to win 15-13. In the second game the Flems took the early lead at 10-2, but Lloyd came back to win by a hair 16-14. It was an allaround team effort that won ,but John Walter and Bob Vance shone as the spikers.

Page and Ruddock continued to win, although Ruddock got a real scare from Dabney. The Darbs amazed everyone by winning the first game 15-0, but then turned sloppy and lost 15-0. The last game was extremely close, being tied as late as 10-10, but Ruddock rallied to come up with the last few points to win 15-11. Page has not lost a set, yet.

Fleming and Ricketts played a very good match, the Flems finally winning in the third game by the score of 15-13. They had lost the first 15-6 and won the second 15-8.

At this writing Page is favored to win and Ruddock to come in second, but Lloyd, having won four, hasn't played the top two teams yet. The Rowdies could break into the top with two excellent games.

More Art (Continued from page 2)

with the New York Philharmon-

Prices for the concerts are \$2.50 for the public and \$1.50 for students. Tickets may be obtained through the mail from the Pasadena Art Museum at 46 North Los Robles. Checks should be made out to Encount-

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Light 1hrown on Photoelectricity

"Anyone who has ever had a sunburn is familier with a photochemical recation." With this phrase Dr. George S. Hammond, Arthur Amos Noyes Professor of Chemistry at Caltech, began his lecture on "Light as a Chemical Reagent" Monday night at Beckman Auditorium. Sight is also a photo-chemical reaction, in which photons entering the eye chemcally generate a nerve impulse to the brain.

Not one, but two

Hammond went on to describe the two major types of photochemical reactions. The first is considered very dull by the photo-chemist; it involves the use of light as a force to trigger off an unstable system.

The second type involving the use of light to drive a chemical reaction, and is often used to do the "hard work" of the chemist. For instance, a synthesis which would require a half-dozen or more elegant steps when done by most methods might require only one simple photochemical process.

Two interesting characteristics of photo-chemical reactions are their speed and their selectivity. The time lapse betwen the absorption of a photon by a molecule and the appearance of the products is often on the order of a thousanth of a second. The selectivity of a photo-chemical reaction is so great that often a photon will cause only a few specific molecules in a complicated system to react, much like burning a single straw in the middle of a haystack without effecting the straws around it.

Exotic shapes

Probably the most important class of photo-chemical reactions is the one in which the energy of the incident photon causes a molecule to take on an exotic shape, and thus store the energy of the photon. This is important because it might be possible to store solar energy in such a way.

We are at present using up earth's supply of fossil energy (as stored by photosynthesis in coal and petroleum) at an alarming rate. The use of artificial photochemical processes may be an answer to the possible energy deficit of the future.

Velikovsky's Backyard Physics Better Than Feynman? (Continued from page 3) lem. But he hints that it in Also in 1960 the direct

stopped the rotation of the plan-Then the comet passed on. 52 years later it returned, stopped the rotation again. When the comet passed on the earth resumed turning, possibly in a different direction from before. But after that Mars caught up with the comet and somehow regularized its eratic orbit into that of the planet Venus.

No, says Willy

Velikovsky figured this out without freshman physics. Willy Ley questioned its plausibility. Since Jupiter has a rotational velocity of 8 miles per second on the equator and the escape velocity for Jupiter's magnetic field is about 37 miles per second, the "object" need an additional 29 miles per second just to leave Jupiter. Then the energy of this huge mass would be calculated. Then this energy would have to be accounted for, Then the earth's rotational energy would have to be calculated.

Ley concluded that there also was no evidence of any earthly disturbance around this time period.

In the meantime Velikovsky has promised, as of September, 1965, to publish, in his next book, the solution to the energy probvolves Jupiter gathering material as it orbited, spinning faster and faster and eventually break-

As it happens there exists a certain amount of scientific evidence substantiating Velikovsky. The Bible records several major catastrophes. Also, fossil evidence shows extinction of unrelated species at very nearly the same time.

Fight!

The stopping of the earth's rotation, according to Velikovsky, was due to electromagnetic forces. But celestial mechanics is based entirely on gravitation. It the spirit of science, Harvard astronomer Donald Menzel declared that "If Velikovsky wants quantitative discussioin, let us give him one." Menzel calculated that for the sun to have an electrical attraction equal to about one-tenth of it gravitational attraction it would have to have a potential of about ten to the nineteenth power volts, and then he showed this to be a practical impossibil-

Coincidentally, Pioneer V showed the existence of magnetic field throughout the universe. On the basis of this data, it has been calculated that the sun has a negative potential of . . . ten to the nineteenth volts.

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Also in 1960 the director of the Paris Observatory noticed that after a strong solar flare the earth's day shortened by .85 milli-seconds. After this slowdown the earth then proceded to rotate faster, shortening the day by 3.7 microsceonds.

In addition, by studying polarization of rocks and pottery and using Carbon-14 dating it seems possible that the earth changed polarization as recently as 800

Argument Continues

And so the controversy continues. Velikovsky has now written numerous books and has proposed numerous other theories. The fact is most scientists will not take the trouble to test his theories. H. H. Hess, chairman of the Space Board of the National Academy of Science recently wrote to Velikovsky concluding with "I do not know of any specific prediction you have made that has since proven to be false." Also V. Bargmann of the physics department at Princeton states, "although we disagree with Velikovsky's theories we feel impelled to make this statement to establish Velikovsky's priority of prediction ... and to urge, in view of these prognostications, that his other conclusions be objectively re-examined."

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Engineers to Join Ranks of Unemployed

Engineers! Just because you chickened out of any math of science options, don't think your troubles are all over. In addition to the call of Uncle Sam, there is also the chance you may be unemployed!

A two-day conference has been scheduled by the California Society of Professional Engineers in response to increasing concern of California engineers over the stability of the employment market for their profession. The conference, to be held March 24-25 on the U.C. Davis campus, will be attended by about 150 professional engineers, educators, and personnell executives.

According to Alfred C. Ingersoll, general chairman of the conference and Dean of Engineering at USC, the detailed examination of engineering employment problems will also cover the effect of training and professional competence on the engineering mar-

In addition to employment stability, the conference also has two other objectives. The first of these is to study the problem of technical obsolescence and its relation to engineering education. The last objective is essentially a formulation of policy

statements to guide the decisions

ers are needed, rather than rais-

ing salaries. Rafferty denied

dentials could not teach in the

It was pointed out to him,

however, that temporary creden-

tials are given in some cases.

based on different qualifications

from permanent credientials.

Rafferty countered with "but

this is only done when there is

not a qualified teacher available" finally admitted "The girl is

The speech itself was fairly

general and on rather safe

ground. Almost nothing contro-

versial could be found anywhere.

It was Rafferty's past newspaper

columns and policies that

brought out contention. Consid-

ering that Rafferty has a some-

what unorthodox outlook on ed-

ucation, the evening was remark-

able non-partisan and quiet.

absolutely right."

of public and private agencies concerning engineering practices. Panels study

These studies will be effected by the use of panels, headed by such prominent engineers as Professor Paul Sultan of the Claremont Graduate School of Economics, and Jack Mason, Director of Engineering, General Dynamics at Pomona.

Other officers of the conference include Albert Tieburg, of the State Employment Relations Agency and Robert J. Kurtz from the CSPE board of directors who will serve as vice-chair-

Trollist Drollness (continued from last week)

In a small town in Minnesota, there was a very popular bar. The owner had obtained thousands of small plastic birds of ten varieties, and was placing one of them in each mug of beer. Of course there was a prize for

The owner noticed that certain brands of beer were selling unequally, so he decided to experiment with the number of birds he put in the different brands. After six months of experimenting, he concluded, "A bird in the Hamm's is worth two in the

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- Professor Warren

Education's Storm Center Quiet

(Continued from page 1) fifth grade books are "incredibly bad." He said primary grade readers promote groupisms and dullness, as well as offering our school children one-third as many vocabulary words as the Russians offer theirs.

The only antagonistic question-

ing came later in the evening in the Y clubroom. Concerning a recent article in the L. A. Times promoting the theory that books about crimes induce crimes, Rafferty was asked if this meant that certain books should not be allowed on school library shelves. His first response was that he only meant certain books, such as the Memoirs of the Marquis de Sade, should be noted by librarians as "potential dynamite." However, the third time he was asked if he thought these books should be kept off library shelves he replied, "I think you would have to be a jackass to let children (high school and younger) read these books. I don't think children should be allowed to read these books."

Incompetents

This was quickly followed by a young girl from PHS asking why California lowers the qualifications for teachers when teach-

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this and stated that California just finished upgrading the qaulifications for all teachers. He added that a teacher without cre-

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