



Dr. Feynman gives keynote address at Caltech-Scripps Conference. Note Dr. Vogt's attentive expression.

Techmen Meet Scrippsies

BY LES FISHBONE

Kissing off all the finer things in life available during the weekend at Caltech, 50 of our finest sought the refuge of Camp Oakes in the San Bernardino Mountains for the annual conference, meeting, or, as the case may be, escaping from reality with the girls from Scripps College in Claremont. The theme of the conference was creativity; certainly the work of the faculty members present and the potential of the students made everyone most receptive to widespread discussion of the topic.

Dr. Richard Feynman delivered the keynote address Friday night. It was entitled "What Is Creativity?" Speaking mainly from the scientist's point of view, Feynman was nevertheless aware of the many similarities in the

creativity of both scientists and artists. "Creativity," he defined, "is the conscious making of something new and of value." The creative person, born and nurtured, is one who can pursue his own problem to a deeper degree than anyone else.

Creativity At Tech

The Caltech physicist then listed four prerequisites for the creative act. First, all good work is done while alone; the intellectual concentration and freedom from criticism resulting from a lack of involvement with others is mandatory. Second, "the problem must be yours." You create your own way of looking at it, and have absolute faith that nobody else in the world can solve it. Balancing this egoism must be the third point—excellent judgment and an ability for self-criticism. In Feynman's opinion, this is the crucial factor that seemingly creative children lack. Finally, the creative individual must have infinite motivation to sustain the rare successes that he will have.

In concluding his talk, he mentioned five methods most used by creative scientists: analogy; generalization; skepticism of the standard way of looking at a problem, e.g., taking it out of its historical context; a naivete is not knowing that an idea may be wrong, since it might have applications not immediately apparent; and the courage to take a stab.

Mostly Sex

With such interesting thoughts provoking them, the Beavers and Scrippsies proceeded to thrash out creativity in twelve discussion groups. However, the theme did not long remain the center of discussion. Inevitably, talk moved to such lively topics as what is wrong with Caltech and Scripps, marriage, sex, and the American mating ritual. As might readily be imagined, students and faculty tore themselves and their views to pieces.

Certainly the most provocative opinion of the weekend was delivered by Dr. Anthony Athos, a personnel relations expert and disinterested observer from USC. "The Caltech student is an

(Continued on page 3)

Techmen First In Math Bout

Caltech won first prize in the 25th annual William Lowell Putnam Mathematical Competition this year. The contest involved 219 teams from colleges in the United States and Canada.

Caltech's first prize in team competition consists of \$500, which will help finance several mathematics prizes at commencement. The winning team was composed of Kenneth Kunen and Norman Camien, both seniors, and Vern Poythress, sophomore. In addition to winning the team prize, each of the three also received \$50.

For ranking one of the five highest individuals among the 1,915 contestants, Poythress received a \$75 prize. For ranking among the second five, Kunen received a \$35 prize.

MIT won second place, Harvard third, Case Institute of Technology at Cleveland fourth, and the University of California at Berkeley fifth.

The contest, sponsored by the Mathematical Association of America, consists of a six-hour written examination on problems covering general college mathematics. The test is given at each of the competing schools.

Houses Elect New Officers

House elections hit hard and fast this week in five of the seven Student Houses. The remaining two, Fleming and Page, had already held their elections.

Fleming started early, as usual, by electing Gordon Myers president, effective as of January 25. Other officers include Ed Perry as vice-president; the team of Tom Baze, Richard Flammang, George Sharman, and Richard Touton as social chairman; Ed Kelm as secretary; and Peter Wyatt as treasurer. The athletic managers are Randy Harslem and Ralph Kimbrell. Steve Poltrock was elected House librarian.

Page finished its elections last Thursday by electing Bill Colglazier president; Carl Scandella vice-president; Jay Romney secretary; and David Van Essen treasurer. The duet of Lee Myers and Gary Schnuelle landed the job of social chairmen, while the trio of Larry Brown, Dave Goodmanson, and Nathan Isgur were chosen athletic managers.

Another early-elected House office is the president of Blacker which was captured by John Eastment in the third week of this term.

The election of the officers of Blacker, Lloyd, and Ruddock,

took place yesterday, too late to include in this week's **Tech**.

In Blacker, Larry Anderson Random Late Houses

ran against Eric Jones for the office of vice-president, while Ken Garbade battled Lee Johnson to decide who would be secretary. Bob Miller ran unopposed for treasurer. Other offices, including social chairman and athletic managers, will be elected Wednesday, March 10.

The Lloyd House elections were initiated with the contest between Bob Piccioni and John Walter for president. For vice president and mighty overlord of the U C C's the two candidates were Cary Eklof and Grey Jennings. Mike Beeson was the only candidate for secretary and likewise the team of Steve Card, Jim Howell, and Lenny Fisher for the social chairmen. For athletic manager the team of Craig McAllister, Marshall Hall, and Bob Vance ran against the team of Mark Hayamizu, Ron Peterson, and Norm Whitely. The candidates for comptroller were Bill Dewert and Mike Meo. Lex Elbone was acclaimed librarian, along with Bill Sampson as food representative.

Ruddock's candidates for presi-

Interhouse Sing Tonight in Beckman

BY MICK MEO

Tonight the seven Student Houses will gain the use of the exclusive Beckman Auditorium for the annual Interhouse Sing. All Houses are represented; Ricketts, Blacker, and Fleming will enter quartets. Dr. Huttenback, Master of Student Houses, will introduce the groups to their competitors, the audience, and the judges.

The groups will line up on the plaza outside at a quarter to eight, so things should get under way by eight bells. First the House glee groups will present their selections. They will be judged on appearance, tone quality, intonation, balance, pronunciation, and choice and suitability of music. The quartets will then compete on much the same basis.

While the judges deliberate on the scoring, the Caltech Glee Club will sing a few numbers, after

ASCIT, BOC, Y Fill Positions

Doug Eaton is now ASCIT social chairman and Sam Logan is rep-at-large. These races were decided in run-offs occurring after last week's **TECH** went to press.

The outgoing Board of Control members appointed Greg Shuptrine and Max Elbaum to next year's BOC, after interviewing a record-breaking number of applicants—45. The other seven positions will be filled by House elections.

In the YMCA elections, Mike Cunningham was elected president; John Eyler, vice-president; Phil Coleman, secretary; Dick Hackathorn, treasurer; Ben Cooper, publicity manager; and Mark Satterthwaite, regional and area representative.

which the results will be announced. To put an end to the evening, everyone will join in rendering a version of the Alma Mater.

Least Squares

Ties will be broken by the well-known principle of the least sum of squares. In the first round of rating, each House is placed for each song (first, second, third, . . .), and the average is taken over the three selections. If Lloyd's and Blacker's average is the same, for example, their places in the various songs will be squared and summed. Three seconds, squared (12) beats two firsts and a fourth (18).

Fleming plans to present another of those notorious Kent Clark drinking songs, and Blacker and Ruddock still intend to sing the same "Der Herr Segne Euch" by Bach. All the Houses' efforts will be recorded for a fee of about \$5, and Lloyd plans to dedicate one of their songs to the frosh physics lecturer Dr. Rochus Vogt.

Female Intuition:

The judges this year are all female: one Marie Gibson, a Cora Lauridson, and Marjane Cartwright. It's too late to send them boxes of candy, but if any of you are hoping that a well-timed telephone call by snowy stud like yourself will swing it for your House, Marie Gibson is a voice teacher at Occidental, Cora Lauridson is an assistant professor of music there, and Marjane Cartwright is Supervisor of Music of the Glendale City Schools.

Techman, when you go to Beckman Auditorium to hear the Interhouse sing, reflect on the fact that Culbertson, not Beckman, might be the scene of the Glee Club's Spring Concert. So, enjoy it while you can, and reflect on the inanities of life.

dent were Stu Galley and Tom Williams. The vice-president was a popular office with four candidates: Stu Davey, Mike Hunsaker, Phil Laipis, and Jeff Pressing. The candidates for secretary were Wally Oliver and Martin Smith (future **Tech** staff member). Other candidates were Greg Shuptrine and Mike Wolf for treasurer; the team of Bill Bloom, Rob Dickenson, and Ed Seguire ran unopposed for social chairmen; Greg Brewer and Dave McKay ran against Les Fetting and Karl Overbeck for athletic managers; and the candidates for librarian were Jay Chapyak and Dick Harley.

Communist!

Tuesday night marked elections in both Dabney and Ricketts. Howard Powell won the election for president of the Darbs over non-existent candidates. Other elected officers were: Jim Pearson over Sean Solomon for executive vice-president; Max Bartlett for secretary over Andy Kampek and Fred Shultz; Henry Suzukawa defeating Dennis White for Treasurer's office; Don Blair, Bob Gerritsen, Art Nagey, and Jerry Yudelson ran unopposed for social vice-presidents; Richard Briggs and Len Erickson also ran unopposed for athletic chairmen, Willard Manning for comptroller; and for historians the team of Paul Chalkin, Kim Gleason, and Mother Tucker.

In Ricketts Gary Ratner cap-
(Continued on page 3)

Free Tickets For Concerts

Caltech students have until 5 p.m. tomorrow to pick up free tickets (two per student) for the Pasadena Symphony Orchestra concerts to be given on Sunday, March 14, in Beckman. The 3 p.m. concert features Alice Schoenfeld, violinist, playing a Mozart concerto. At 7:45 p.m. the soloist is Christopher Parkening, playing a guitar concerto composed especially for him by Castelnuovo-Tedesco. The orchestra will play works of Schubert, Honegger, and Hovhannes. Tickets are available at the Beckman Ticket Office.

Notices

ASCIT APPOINTIVE OFFICERS

Applications are now open for **Tech** business manager and ASCIT assembly chairman. **Tech** business manager applications must be submitted by 9 p.m., March 8; those for assembly chairman will remain open indefinitely. Applications should be submitted in writing to Fred Lamb, Ruddock; applicants will be interviewed later.

Applications for the other appointive offices will be opened at the beginning of third term.

CRICKET PRACTICE

For anyone interested, will commence on Saturday, March 6, at 10 a.m. in TP.

YALE RUSSIAN CHORUS

Tickets are available for the Yale Russian Chorus performance on Monday, March 29 (Registration Day) both at the Beckman Ticket Office and at the Caltech Y Office. General Admission is \$1.75 and \$2.25. Student Admission is \$1.00 and \$1.50.

Editorials

Innovations

are coming to the **California Tech**.

News stories will contain news with as little editorializing as possible. Coverage will include all relevant campus events of which we are aware.

Feature articles will spotlight those interesting aspects of Caltech (or of related places and things and persons) that are not generally known or heard about. Several new regular columns will be added to the **Tech**; old ones will be brought in line with current student interests.

Editorials will feature subjects which in our opinions are of major concern to the campus. Reflecting our personal views and attitudes, the editorials printed in this space may offend some and delight others. We hope that those so affected will feel free to address us by letters; subject to the dictates of decency and available copy space, such student opinion will gladly be printed.

Less noticeable changes will be a modification of the staff structure for greater efficiency, a somewhat different office setup, and a new subscription policy. A note about subscriptions: the **Tech** will be mailed out weekly during our editorship. There will be no reason for one to mail an illegal copy of the **Tech** home.

Now it is your turn to make some innovations for us. What we want—and what the **California Tech** sorely needs—is more feedback from our readers. Our goal—and your goal—is a better, more interesting campus newspaper.

Tim Hendrickson
Norton Greenfeld
Bob Berry

Help!

As you can see from the above, we've cut out quite a job for ourselves. There are a number of reasons why we're going to have trouble doing it. We lack the humor of the former editors, we lack the wit of the former editors, but most of all we lack the staff of the former editors. Third term is always a bad one for the **Tech**. The annual epidemic of "care" wipes out our seniors, hardly ever are there any juniors and sophomores, the frosh start dropping out with acute cases of apathy, and we don't get a new crop of gung-ho frosh until next year.

All of this puts a larger work load on those of us who are left, and it means that some potentially important stories won't get covered. For the coming term we are going to need a sports editor, a features editor, reviewers, reporters, and infinite copy staff.

So do the old Alma Mater a favor and come down Monday night and talk to us about some of these hard-to-get positions. We won't bite, but we'll twist your arm with such lucrative benefits as three units of A, the opportunity to meet influential people, the chance to raise a little hell, power, glory, graft, prestige, and your name in the paper. Besides, it snows girls and grad schools.

—Bob Berry
Tim Hendrickson
Norton Greenfeld

Book Review

Pornographic Satire

Candy by Terry Southern and Mason Hoffenberg. G. P. Putnam's Sons, 1964; \$95.

BY TOM GREENFIELD

Modeled after *Candide*, this book is perhaps best interpreted as a satire on contemporary sexual behavior in the US, but it might be thought of also as a spoof on pornography. Anyway, whatever its motivation (the artist probably had no conscious end in mind, anyway), the result is a shriekingly funny book. The unconventionally irreverent directness and unique associations which are aroused in the reader make for remarkably palatable reading; it is a book no one should pass up.

What is more, be careful when you buy it to get the real **Candy** (see above). Do not be persuaded to buy one of the many pirated facsimiles offered by such publishers as Lancer and Greenleaf Classics. (Even though the former boldly states on the cover, "Not one word changed! This is the original, uncut and unexpurgated edition as first publish-

ed and banned in Paris.")

These versions have the pseudonym Maxwell Kenton and my theory is that they are unauthor-
(Continued on page 6)

EDITORIAL POLICY

For the information of its readers, the **Tech** presents the following summary of its editorial policy:

The first signature following an editorial indicates the author of that editorial. The following signature, if any, indicates approval by the other editor. If all three editors sign the editorial, that editorial then represents the opinion of the **California Tech**.

In general, column writers have complete freedom as to the content of their columns. No column will be eliminated from any issue of the paper solely because of the opinions represented in that



Unfortunately the Ice House has come up this month with two supporting acts that are way above average, the best overall in a long time, and a main act that is likely the worst in recent Ice House history.

First act in the show is Carol Hedin, described by the **Washington Post** as having "an eloquent appearance, tounge in cheek humor and a husky, deep throated voice." Although I didn't find too much humor of any kind, the appearance and superb voice were very much in evidence. Miss Hedin plays the autoharp and guitar with equal dexterity and plays both quite well. Her manner, arrangements, and material are all good, I was very impressed with her choice of material, much of which was original (to me at least). Her voice is clear and well-defined, and is quite low, unlike Joan Baez or Bonnie Dobson, and the songs she sung were ones in which this type of voice was most effective. She's really good and a delight to sit back and listen to.

Second act in the new show is Peter Evans, easily the best American flamenco guitarist I have ever heard. As a matter of fact, his playing Tuesday night ranked with the best I've heard and he drew more applause from the 30 odd people there than I've ever heard from an audience that size. I was impressed as much

ROTCs Become Licensed Pilots

BY JOHN ROUSE

Recently Grant Blackinton, Barry Dinius, and Steve Hall completed the Air Force ROTC Flight Instruction Program and received their pilot's licenses. The three are AFROTC seniors, and are classified in the 1-P, or pilot, category.

The FIP program provides 36.5 hours of flight instruction, paid for by the Air Force. It is voluntary, and those physically qualified are eligible for the flight instruction in their senior year. The program does not include getting the pilot's license, but it does provide the training needed to get one.

Currently, the ROTC pilots are flying at their own expense to build experience. They are happy to take along passengers, and have already taken a number of non-ROTC Techmen on rides. They say night flying makes a great date affair, and are planning to fly to Las Vegas third term.

with his choice of material, which was the spirited and moving type I prefer best, as with his consummate skill on the guitar. His biggest drawback was the fault which seems to be common to all flamenco guitarists—a serenity and complete lack of enthusiasm on stage that detracts from any performance.

Imagine the Beatles with long sideburns and earrings, accompanied on stage by two teen-age girls with Beatle haircuts, and singing a lot of folk songs to a rock-and-roll beat (drums, electric guitars, etc.) and you have a very close approximation of the Goldebriars, the very disappointing lead act this month. Their claim of singing a cross between folk and rock-n-roll in a progressive style would send anyone who had ever been associated with folk music screaming into the desert. They were little more than another group cashing in on the Beatle craze by applying it to their own gimmick. They were also poor. If you really like the Beatles you may think they're all right. If not, they'll be hard to take.

All in all, it's a shame two excellent acts like Carol Hedin and Peter Evans had to be put on the same program with such a childish lead act. Go and see it if you wish, as the first two acts make the show at least fair, but you may find yourself walking out before the end of the Goldebriars.

Teller at Tech For Interviews

BY STEVE BLUMSACK

Caltech was honored by the presence of Dr. Edward Teller last Friday when the famed physicist spent most of the afternoon interviewing applicants for the Hertz Graduate Fellowships in applied sciences. The Nobel Laureate continued his interviews into the evening after dining at the Atheneum.

The awards total \$18,000 for three years of graduate study at
(Continued on page 6)

Letters

Parkinson Views Library

I should like to direct to the contemplation of the Caltech Community, the results of recent lucubrations on the proposed Millikan Library.

C. Northcote Parkinson, in the monumental work in which he propounds his famous laws, states (ch. 6): "It is now known that a perfection of planned layout is achieved only by institutions on the point of collapse."

Verification is rife: e.g., most of the Vatican complex, completed long after the greatest days of the papacy; Versailles, similarly completed following the Sun King's zenith splendour; and of course the palace of the League of Nations, completed in 1937.

It seems presently impossible to halt the erection of the Library—except perhaps that the design might be inverted to proceed nine-odd stories down, rather than up.

But this latter course would be sadly in error. For according to Ernest Bramah, as quoted by Sir Harold and Lady Jeffreys, "... it has been aptly claimed that even the appearance of a giraffe must be capable of some rational explanation."

Not presuming to understand the entire situation, one is bound to concede that the "disguised and symbolic form," as suggested by Otto Rank and Sigmund Freud, may be sufficient cause for giving the structure its characteristic upward accent.

In summary, perhaps only minor modifications are in order. These should certainly include:

- Suitable gargoyles, to grace the cornices.
- A central shaft (for here is provided a singular opportunity to replace the aging apparatus in Robinson).
- A modest mooring mast for dirigibles.

Prostratingly, I beg to remain, your most humble & obdt. servant,

C. Pozo Theophilus

Editors' Note: Although letters submitted with a pseudonym must generally be accompanied by the author's real name, the editors may, at their discretion, take the responsibility for an unsigned letter. The above is such a case.

California Tech

Published weekly during the school year by the Associated Students of the California Institute of Technology, Incorporated.

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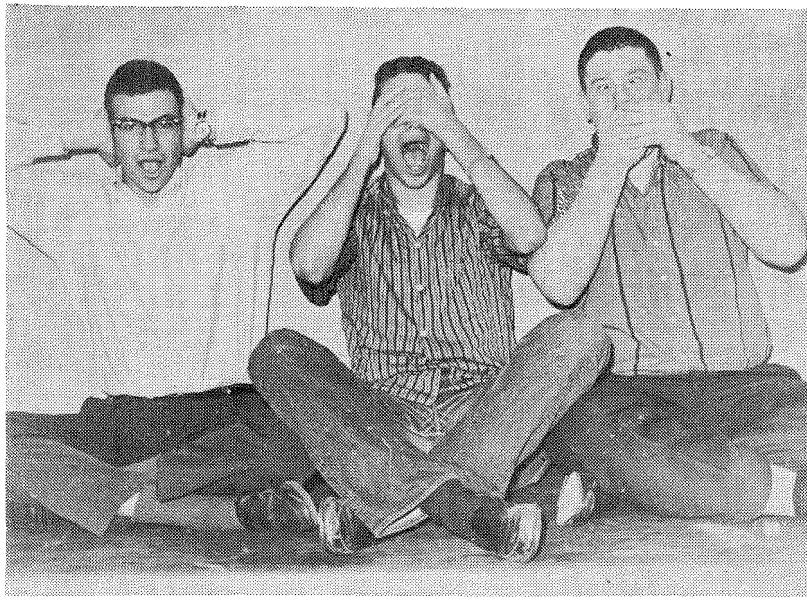
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California Tech, 1201 East California Blvd., Pasadena, California 91109.
Member of The Associated Collegiate Press
Represented nationally by National Advertising Service, Inc.
Second Class postage paid at Pasadena, California
Printed by Bickley Printing Co., 25 So. Fair Oaks Ave., Pasadena—SY 2-6594
Subscriptions: \$1.50 per term, \$4.00 per year. Life Subscription, \$100.00.



Asked about the new TECH editor triumvirate, the last three-man team to be editor expressed great confidence that the new team will carry on the glorious traditions. Note individual on right, politely stifling a complacent yawn.

Campbell Labs Exposed

Have you ever wondered just what goes on in those greenhouses on San Pasqual—the Campbell, Dolk, and Earhart plant research labs? The Tech has wondered too, and we've found out.

In the first place, they are not ordinary greenhouses; they're a phytotron. According to Dr. Anton Lang, professor of biology, a phytotron is a controlled environment laboratory which also permits changing environments.

Dirty Old Man

It is undoubtedly the hardest place on campus to get into. In order to prevent contamination of the plants, the visitor on reaching the main entrance must phone ahead and receive clearance. He then enters something akin to an isolation chamber where he must wash his face and hands and comb his hair. He then enters a second room where he strips and dons a pair of sterilized pajamas. If he wants to smoke, that's all right, but he must use one of the lab's auto-claved cigarettes.

Once inside, the visitor finds five large plant-filled rooms—the greenhouses seen from outside. However, each is kept at a specified temperature and they all have artificial lighting so that each has its own period of "day" and "night". There are other rooms in the interior, each at its own temperature and light conditions ranging from total darkness to 24-hour lighting. By moving plants through the various

rooms, the experimenters can obtain almost any environmental condition necessary.

The water flowing over the top of the greenhouse roofs is not to block infrared, but to cool the roof and walls, simplifying the job of keeping the temperature constant within a one degree range. There is also a room for simulated rain, but this is no longer in use.

Decrepit Old Phytotron

Our phytotron is the oldest such installation still in existence, although many have been built since it was started. It was conceived by Dr. F. W. Went and built in 1940 at a cost of \$1.5 million. The high price was due to the fact that it can hold mature plants, and as Dr. Lang says, "Greenhouses are the most difficult buildings in the world to control."

Using these controlled conditions, biologists have been able to learn quite a bit about plant

growth. Plants are not mobile, so they adapt quite intimately to their environment. For instance, the cold of winter seems to cause some plants to bloom in the spring, whereas the long days of summer cause others to bloom. Also, it has been shown that the effect of temperature on growth rate produces the same curve as the effect of temperature on enzyme activity.

Furthermore, growth of the tomato plant seems to depend not on the ratio of light to dark periods, but on the frequency of these periods. Maximum growth occurs when the sum of the two periods is about 24 hours. From the results of these and other experiments in the phytotron, a "biological clock" has been postulated. Such a mechanism would regulate the plant's activity on the basis of environmental conditions in much the same way as whatever makes birds fly south for the winter.

Frosh Are Sexually Frustrated

them," confessed Dr. John R. Weir, associate professor of psychology, in his opening remarks at last Thursday's Frosh Diner's Forum. Held at Chandler as usual, the YMCA-sponsored program was moved up a day from its traditional Friday evening date in order to avoid conflicts with the Scripps Conference.

According to Freud

"All of us have our desires and frustrations," explained Weir. These arise from a variety of human needs which, for one reason or another, are not adequately satisfied. Hostile desires can be satisfied, or sublimated, in Freudian terminology, by doing things which are socially acceptable. For example, the desire to inflict physical punishment on others can be sublimated by becoming a prize-fighter. On the other hand, sexual needs are a more difficult problem, according to Weir, since our Western society forbids sexual behavior outside of marriage. How, then, can these needs be satisfied in a socially acceptable manner?

One way to accomplish this is through creative endeavors, such as poetry, art, or scientific inquiry; another way is to lead a vigorous, active existence. "However, I think there is no way to realistically do this, that does not in some way involve sex."

Kinsey Report Cited

Weir next exemplified his belief that sexual activity is a healthy, natural form of behavior. "The sense of guilt that often

accompanies thoughts, desires, or actions involving sex is a consequence of having been taught that it is evil or wrong," he continued. Attitudes toward sex differ the world over; the only belief common to all societies is a condemnation of adultery, because it destroys the family unit.

Weir referred frequently to the Kinsey Report, which indicates that sex attitudes and values in this country are changing rapidly. Premarital intercourse, for example, is twice as frequent today as it was 25 years ago. "There are several reasons for this," said Weir. "Less influence and control from the Church is one. Another is the long delay between the age of physiological maturity and that of autonomous existence." In earlier generations, he explained, it was common for young people to obtain employment and achieve independence when only 15 to 18 years of age. Today, after completion of college study or military service, that age is often 25 or 26.

Life at the Monastery

From the standpoint of sexual frustrations, the situation here at Caltech is not healthy, in Weir's opinion. He feels there is no guilt-free way to release tensions; the result is excessive preoccupation and sometimes even illness for some Techmen.

"I don't know of any way to live with your sexual frustrations except to suffer through

(Continued on page 6)

Sue For BOD

(Continued from page 1)

tured the presidency over the opposition of Seth Putterman. The results for the other offices were: Ron Constable over Doug Eaton for vice-president; the team of Sven Anderson, George Jahn, Craig Nelson, and Tom Oberjat won easily without opposition to land the title of social chairmen; Greg Kourilsky over Gary Jaggers for treasurer; and the team of Jim Beall, Larry Dillehay, and Tony Gharret defeated the team of Ed Groth, Walt Innes, and Phil Paine to corner the market on athletic managers.

Scrippssex

(Continued from page 1)

tellectual cutthroat," he stated, "hiding his suppressed emotions behind a facade of cognitive knowledge. Meanwhile, the Scripps undergrad is too meek to assert herself in the face of such seeming genius."

Aside from the intellectual pursuits, the conferees all enjoyed plenty of leisure time; carefree students frolicked in the grandeur of Nature at her finest—cool breezes, a sunny, clear sky, and a rough, mountainous terrian that would challenge ever the most adept nature lover. It almost seemed as if the conference might last a day longer than planned as one of the buses arrived two hours late. And to top off the trip home, one bus broke down, so that the other had to take all the girls to Scripps and return for the again lonesome Beavers. To be sure, it was an interesting weekend.

Corcoran Talks on Fuel Cells

BY TASS

Dr. Corcoran talked about fuel cells at this week's demonstration lecture. He covered basic principles of fuel cells, compared them with other sources of power generation, and predicted future advances and possible uses for the cells.

Corcoran received his BS and MS in chemical engineering here. During WW II he worked on propellants for the Army. After the war, he received his PhD and became Director of Technical Development at Cutter Pharmaceutical Laboratory. During his absence from Tech, the faculty softball team suffered great hardships.

Wide Ranging Interests

Team spirit and other factors called Corcroan back, and he has since been doing research in chemical kinetics. His work ranges from high temperature systems, such as found in the heart of some types of fuel cells, to reactions in the LA Smogosphere.

Corcoran dwelt on hydrogen-oxygen fuel cells, as these have so far shown the most promise. He explained that one of the at-

tractions of the fuel cell is its efficiency—up to twice that of the best alternatives, such as steam turbine or diesel engine. The cells may be improved by running them at higher temperatures and pressures, and by improving their catalysts and fuels.

Engineers' Problem

Currently fuel cells can produce up to 200 amperes per square foot; Corcoran predicts that this figure can be increased four-fold in a few years. The best fuel cells now produce two or three kilowatts per cubic foot of fuel cell, and cost several thousand dollars per kilowatt.

ALL SAINTS EPISCOPAL CHURCH

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SPORTS

Tech Baseball Team Lost Three Last Week

The baseball team started the year off with a bang, but it was rather a backfire. Although showing occasional brilliance and some promise for the future the team managed to lose its first three games to Cal Lutheran. The

first game on Wednesday ended with the score 9-1. The game was very close, despite what the score seems to indicate. Caltech was constantly threatening but was never able to get the big hit. Twice there were men on third with no one out, once with the bases loaded, and both times the next three men struck out. Diebel and McQuillan pitched well in their first game of the season.

The two games on Saturday at Cal Lutheran came off much worse, ending with scores of 14-8 and 16-4. The team was hurting from injuries and the absence of the playboys who went to the snow party or the Scripps conference. The defense was like a sieve, committing more than an error an inning and making other mistakes. But as a hope for the future the team showed a spark in its hitting by staging four and five run rallies. Tom Resney has been the outstanding player up till now, playing centerfield expertly, going 5 for 9 at bat, and pitching the second game of the doubleheader.

The team doesn't have the great pitching it had last year, but if the defense solidifies and the batting becomes a little more consistent we will win several games this year.

Blacker Captures Discobolus

In first discobolus tennis match played last weekend, Blacker House defeated Ruddock 4-1 in contests that required three days to complete.

In first singles Dave McCarroll overpowered Ed Kuplis with smashes down both sidelines in the first set to win 6-0. In the second set McCarroll had control problems on serves and although he had no trouble breaking Kuplis' serve, he could not hold his own and lost the set 12-10. The third set was similar to the first and McCarroll won 6-1.

BFD
Wayne Pitcher of Blacker proved to be too strong and too consistent for Walt Deal and defeated the Ruddock senior 6-2, 6-2.

The third singles contest was by far the closest. Both Frank Pate of Blacker and Jeff Wise of Ruddock played extremely cautiously. Pate was able to make up a 5-3 deficit, but Wise hung on to win the first set 10-8.

Wise took an early lead in the second set and, at one point, had match point with the score 6-5 in his favor. Pate was able to rally from this point and won the set 8-6. Wise took a 3-1 lead into the fifth game of the third set, but once again Pate came back to win the set and the match 6-4 after two and a half hours of play.

When George Williams could not be found to begin the fourth singles play, York Liao was called in as a substitute and defeated Bob Dickinson of Ruddock 8-4 after Dickinson pulled a muscle in his arm.

Ruddock's only win came in doubles, as Carl Friedlander and Shelby Chapman teamed to defeat Bill Zame and Kelley Booth 6-2, 6-3.

Season Hopeful For Frosh Team

BY BARRY LIEBERMANN

The frosh baseball team under the coaching of Keith Jensen officially started workouts last week. For only one week of practice the infield looks quite good with Fettig at third, Hammons at short, and Chapyak at second.

A game was scheduled for this Friday with Biola, but was cancelled, and as it looks now the first game will not be played until third term.

Enough frosh have come out to just about put a team on the field. More, however, are needed, especially at first base and in the outfield. Any freshman who is even a first degree approximation to a baseball player is encouraged to show up for practice.

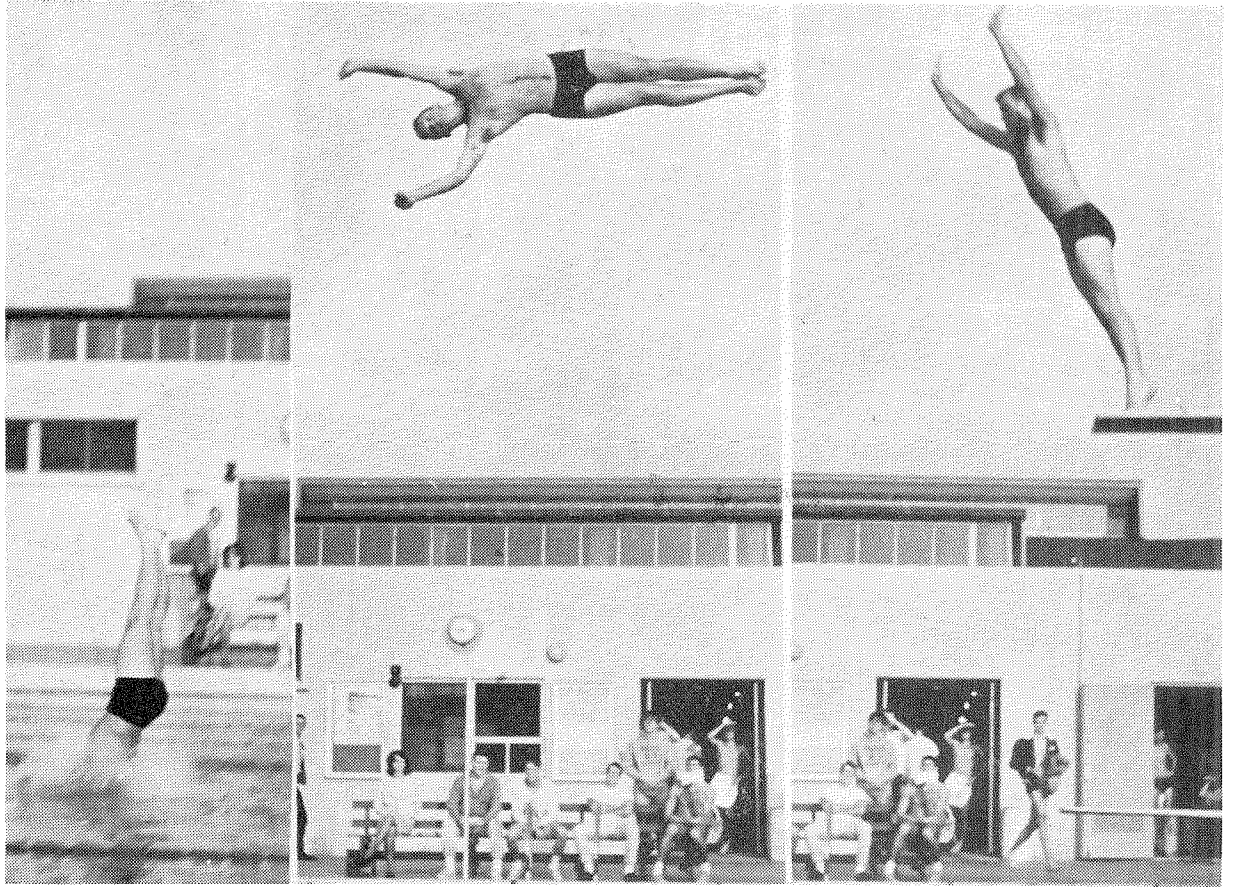
Frosh Tennis Team Loses to Claremont

Claremont-Harvey Mudd's frosh upended Caltech's freshman tennis team last Saturday at TP, 8-1. Although this score indicates a disaster, many of the individual matches were close; with a few breaks, it might have been substantially tighter.

Playing in the very difficult first singles spot, Ray Kawal managed to win only one game in two sets. Larry Brown did somewhat better in the second position, but still lost, 6-3, 6-1. Roger Davidheiser, playing third, lost a 5-2 lead in his first set and

ended up losing 7-5, 6-4. Fourth man Herb Robinson salvaged Caltech's only victory, 6-3, 6-3. A few bad breaks cost Jeff Haight a 6-4, 7-5 loss in the fifth spot. Ed Groth, playing sixth, lost by the more decisive scores of 6-1, and 6-0.

The doubles teams fared somewhat better: Kawal and Brown lost by 7-5, and 6-2 scores; Davidheiser and Groth were also beaten in straight sets; Robinson and Haight came close to victory but ended up on the short end of 7-5 and 6-4 sets.



John Eyer starts his dive in the right picture, reaches his highest height in the middle, and enters the water in the left picture.

Frosh Swimmers Shine; Take Second in Relays

The varsity swim team met San Bernardino Valley College and Cal Poly (Pomona) last week in the Alumni Pool. The webmen lost both these meets to teams they had beaten the year before, but there were some good performances.

Larry Anderson swam a good 2:03.1 in the 200 yard freestyle. Rick Touton won the 100 yard freestyle, and Pat Miller did the best time of his swimming career in the 200 breast stroke in 2:39.7. This is the first time all the men on the final relay have been fresh, and the performance was encouraging.

Glub!
In the SCIAC swimming relays, the Caltech varsity finished third while the frosh took second. Both Occidental teams dominated the meet. Tech's varsity took second place in the 200 yard freestyle relay as Held, Jenkins, Touton, and Anderson teamed together to swim a 1:36.5. The combination of Payne, Ryan, Erickson, and Nielson barely touched out the Redlands team to take

second in the 200 yard backstroke relay in 2:12.6.

The only other varsity medal winners were the foursome of Nelson, Cooper, Soha, and Miller that took second place in the 200 yard breaststroke relay in 2:10.5, faster than the backstrokers. This team broke the existing record but finished behind the Redlands team, which set a new record of 2:06.8.

Wet Wrestler
Brutlag, Garbade, Spencer, and Bauske combined to take second in the 200 yard back relay for the frosh. The frosh won the 200 yard breast relay with a record time of 2:16.9 swimming DeWitt,

Gerritsen, Haviland, and Woodhead, whose only conditioning consisted of intercollegiate wrestling. Boone, Brutlag, Spencer, and Griswald took third in the 500 yard freestyle relay.

Final freshman standings: Oxy 74, Caltech 52, Redlands 36, Pomona 32, and Claremont-Harvey Mudd 20. Final varsity standings: Oxy 78, Redlands 65, Caltech 50, Claremont-Harvey Mudd 39, Pomona 34. As Whittier has no frosh or varsity teams this year there will be an intersquad meet between a team headed by Anderson against one headed by Jenkins. Come and see a winning team at 4.



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Page, Flems Lead Volleyball

Interhouse volleyball produced a couple of major upsets during the first week of competition with the result that Page and Fleming are way ahead of the rest of the pack after every team but Dabney is halfway through the season.

The top two teams rolled by their first three opponents with little difficulty except in one con-

test apiece. Blacker threw a scare into the Page hopes last Tuesday by winning the second game, but Page's consistent play salvaged the third game. Ruddock jolted Fleming with seven straight points to open their game, but Fleming spiked their way to victory thereafter.

Ruddock virtually eliminated itself from the Interhouse race

by dropping three straight, two of which came at the hands of fairly poor teams. The trophy race is now down to Fleming and Page and could hinge on their forthcoming game.

Game Results

Page over Blacker 2-1
 Fleming over Ruddock 2-0
 Page over Dabney 2-0
 Blacker over Ricketts 2-0
 Fleming over Blacker 2-0
 Dabney over Lloyd 2-0
 Page over Lloyd 2-0
 Fleming over Ricketts 2-0
 Ricketts over Ruddock 2-0
 Lloyd over Ruddock 2-0

Standings

House	Won	Lost
Fleming	3	0
Page	3	0
Blacker	1	2
Dabney	1	1
Lloyd	1	2
Ricketts	1	2
Ruddock	0	3

Varsity Netters Topple Both Claremont and Pomona

BY PETER BLOOMFIELD

For the first time in three years, the Caltech varsity tennis team defeated Claremont-Harvey Mudd. The win came last Saturday at Claremont by a 5-4 final score.

Both teams were evenly matched, but Tech won the decisive match in third doubles as Rose and Pressing overcame a 4-6 first set loss to win the second and third sets 10-8 and 6-4 respectively.

Had Caltech's number one man, Butch Niell, been playing up to his usual standard, the varsity might have had a more decisive victory. Butch lost his singles match 6-4, 3-6, 1-6 and teamed with John Hosher, who had won his singles match, to lose a close first doubles contest 4-6, 6-3, 5-7.

Then on Tuesday afternoon Pomona fell victim to Tech's mighty team of TP. The teams split the six singles matches but Tech captured all three doubles match-

es. The Niell-Hosher combination triumphed 6-4, 6-2 and inspired Gren and Ellis to win even more decisively 6-4, 6-1. Rose and Pressing sent Pomona home by winning the first set 9-7.

The netters had already won the even-numbered singles matches. Hosher won in straight sets 6-4 and 7-5, Ellis rallied to take the last two sets 6-0, 6-1, after losing the first set 3-6. Buckholtz then won sixth singles in a close match 6-4, 8-6.

Sailing Team Takes Tenth in First Meet

BY DAVE HAMMOND

Five members of the Caltech Sailing Team journeyed to San Luis Obispo last weekend to begin the spring racing series for 1965. As a portent of things to come later in the weekend, the boat began to slide off the back of the car in the middle of the freeway just south of South Barbara.

Overcoming the effect of a wild party the night before and a long-winded business meeting the morning after, the teams were able to start racing by 12:30 Saturday.

Tech started off fairly well by taking a sixth and a fifth in the first two races, but success went

to their heads. They came in near the back of the eleven boat pack in the next three races and Don Radcliffe and Wayne Ryback were almost disqualified for paddling backward.

As the winds came up later in the day, Tech got back on the stick and finished fifth and eighth in the last two races. Overall, Tech came in tenth out of eleven, losing to UCLA by one point and Oxy by six.

The team now looks forward to the next regatta in Newport Harbor on March 13, but a prior engagement in Dabney Hall may limit participation. Anyone interested in top-level competition should contact Don Radcliffe in 210 Page.

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Teller Here And Gone

(Continued from page 2)

four universities in the United States: Caltech, MIT, the University of Chicago, and the UC Davis-Livermore campus. Only those who are three years away from a PhD degree are eligible, since so many of the applicants are already graduate students.

Teller explained that the competition at all schools is intense, but especially so at all except the University of California, where he is a faculty member. The applied sciences division is only 18 months old and has less than 100 graduate students in it. However, several generous fellowships are being offered there for next year, which indicated that a sizeable increase in the number of students should take place.

He talked for a few minutes about the facilities at Livermore.

Trustees Vote New Option

At a closed meeting last Monday, Caltech Board of Trustees voted to establish new options in three areas of the humanities: economics, history, and English. This vote was actually a formality, as the real test had come the previous Monday at the faculty meeting.

The frosh program for students planning to enter one of these three new options will be the same as the current program for all frosh; sophomores will be required to take Ma 2, Ph 2, and H 2, plus nine additional units of math, science, or engineering courses in each team. The student will also be required to take a total of 60 units in technical subjects over his junior and senior years. The program will lead to a BS degree in the humanities field that the student had selected.

This change will have little or no effect on the admissions procedure; the committee will not consider the option that an applicant has designated as a criterion for admission. Students originally intending to major in a humanities area but willing to fulfill the still stringent technical requirements will be given equal consideration with pre-scientists.

The new option is expected to make it unnecessary for the student who originally plans to major in science and then decides to go into humanities to transfer out of Caltech. Dean Jones pointed out that the most common reason given ten years ago by accepted applicants for not attending Caltech was the lack of funds; recently, it has been the lack of liberal arts courses. The new humanities option would counter this latter grievance.

Piece Of Candy

(Continued from page 2)

ized translations from the French. Certainly the word order is different and less effective in these ostensibly accurate editions. For example, in the hilarious scene where Emanuel, the Mexican gardener, is busily making the most of Candy's midnight invitation and her unprepared father enters her boudoir flabbergasted, he at first produces only the strangulated sounds, "... urg... ach... chchch," but eventually manages to articulate, "You... You... You... COMMUNIST!" in the inferior copies he is only allowed to say, "You... You... You..." The real Candy has a photo of her on the front—do not be tempted by the alluring kiss or the unassuming candy stick of the unauthentic versions.

Out of the \$100 million budget, \$10 million is spent on computers, of which \$1 million is devoted entirely to research.

But Teller did not come here to sell his school like a public relations agent. From my first meeting of him, it was obvious he was no ordinary interviewer. While most take several minutes for a formal introduction and worthless talk, Teller follows a brief handshake with direct, personal questions.

Intelligence Helps

He differs from other interviewers in another way, also. Most interviewers ask the standard, vague questions so that the modern student, armed with an arsenal of generalities and meaningless replies, is well-prepared for most questions. An interview with Teller lacks all this and consists of factual questions that necessitate concrete, short answers.

My overall impression of Dr. Teller after about 45 minutes was that he is a man dedicated to his work looking for others equally dedicated; he dislikes formalities and wants to get down to business right away; finally, he is a man of few words—he will not beat around the bush when asking or answering questions, but will ask or reply in the most direct manner.

Psychologist Eells Explains Tech

BY YONI LINGAM

Do you feel like you're cracking up? Is the pressure getting you down? If so, you're not alone. According to Dr. Kenneth Eells, institute psychologist, over 100 distraught Teckers pass through his office each year.

Eells (who doesn't use a couch) points out that many of his patients have academic problems. Although humanities options and no grades for frosh are a step in the right direction, life at Tech still presents competition and pressure—things an incoming student may not have encountered before. "And we are very busy around exams time," he adds.

Would Scrippies Do?

Another obvious problem is the lack of girls here. As Tech is not likely to be coeducational for some time, Eells feels that we must make the best of a bad situation. Then, too, some frosh come here with definite religious beliefs. These don't coincide with what they learn here, but they feel that existence has little purpose without religion.

If a student has a problem and it bothers him—he should come in and talk it over. "But," says Eells, "the chief difficulty here, as in every college, is that people don't feel that seeing a psycho-

logist is very respectable. We can't help them very much if they don't want to change."

Big Mouths

Once a student does come in, the treatment varies with the problem, but just talking about it usually helps. "We try very much to help them find their own solutions; I offer little advice." The effect on most peo-

ple is to reassure them—cases are very rarely serious.

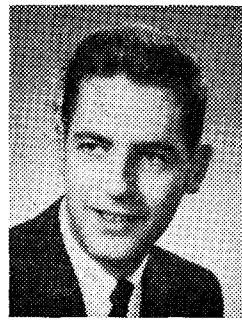
One would think that Tech, with its off-beat types, might prove fertile ground for the psychologist. Not so, says Eells. "I'm not nearly as sure now that these non-conformists are in need of help... The only broad conclusion I have reached is that Caltech students are all different."

Next Week In Sports

VARSITY BASEBALL			
Sat.	March 6	1:00 p.m.	Biola (2) at Biola
Wed.	March 10	3:00 p.m.	L. A. Pacific at Caltech
VARSITY GOLF			
Mon.	March 8	1:30 p.m.	Pomona at Caltech
VARSITY SWIMMING			
Fri.	March 5	4:00 p.m.	Intersquad meet
Wed.	March 10	4:15 p.m.	Cerritos at Caltech
FROSH SWIMMING			
Fri.	March 5	4:00 p.m.	Intersquad meet
VARSITY TENNIS			
Sat.	March 6	1:30 p.m.	Whittier at Caltech
FROSH TENNIS			
Sat.	March 6	1:30 p.m.	Whittier at Whittier
TRACK AND FIELD			
Sat.	March 6	1:30 p.m.	Claremont-Mudd at Caltech
Thur.	March 11	4:00 p.m.	Pasadena College at Caltech

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