

Cheer,
cheer,

California Tech

Associated Students of the California Institute of Technology

The gang's
new here!

Volume LVIII.

Pasadena, California, Thursday, February 23, 1967

Number 19

Northwestern Wins Debate Tourney Here

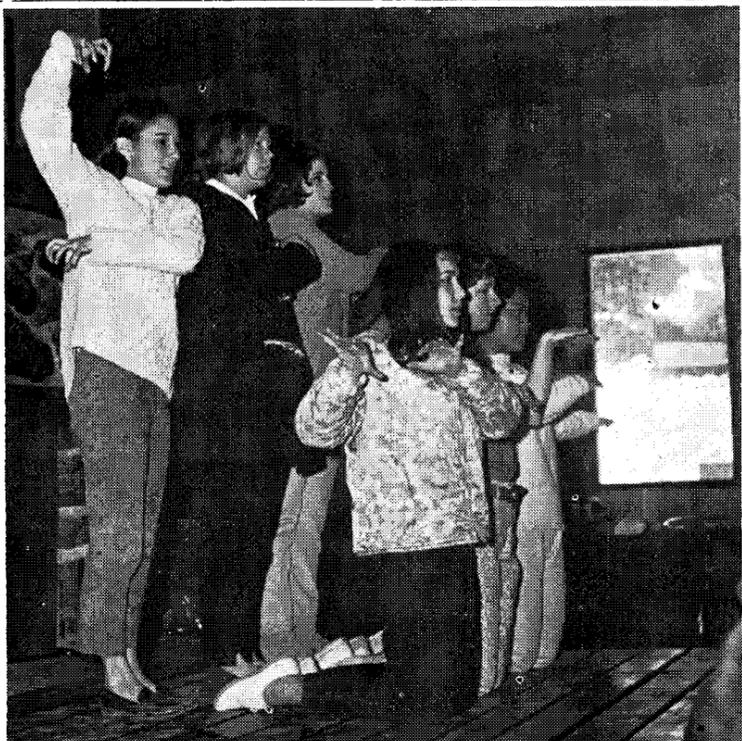
The Third Annual Caltech Computer-Controlled Debate Tournament, held this weekend, surpassed all expectations for efficiency and keen competition.

The team of David Zarefsky and Mike Denger of Northwestern University took the top honors, with Texas Christian University finishing second. The competition was as stiff as any held on the West coast and spectator turnout, especially for such teams as Harvard, was considerable. The tournament also set records for the largest number of distant teams in a California tournament. It is interesting to note that seven of the sixteen teams in the elimination rounds came more than 1000 miles to participate.

The tournament was certainly a testimonial to the capabilities of computerized debate tournaments. Unlike the last two years when minor difficulties (such as burned-out circuit boards) cropped up, this year the program ran perfectly. The machine paired the preliminary debates giving emphasis to geographical distribution. It also assigned judges and rooms for the debates. By means of a special weighting formula, the machine evaluated the performance of each team and chose the top 16 teams for the elimination rounds.

This is perhaps the most interesting part: the computer correctly predicted all but one of the top eight teams, in order! As well as predicting the eventual victors at the end of the prelims, it correctly predicted the outcome of 13 of the 15 elimination round debates.

This lends credence to the theory of computer-chosen finalists in debate tournaments. By means of the program (which is being further refined), such elements as bad luck in pairings are almost completely eliminated, thus making our tournament certainly the fairest in the nation.



—photo by Haviland

Scrippsies at the Caltech-Scripps Conference mimic Teckers as the latter begin practice for next month's Interhouse Sing.

Ensemble Closes Concert Tour Near San Francisco

by Roger Goodman
and Rick Sinclair

The Caltech Glee Club made its triumphant return Sunday night from its five day annual tour. Under the guidance of director Olaf M. Frodsham and assistant director Mrs. Priscilla Remeta, the 60 touring members traveled to the San Francisco Bay area, where the Club has built up a following during the past 14 years. They were joined by guest organist Mr. Joseph Venable and Oxy coed Miss Patricia Varney, contralto who was soloist for the *Alto Rhapsodie* by Brahms.

The repertoire consisted of sacred music, humorous songs, folk-songs, spirituals, and selections from "My Fair Lady." The concerts were highlighted with songs by the Chamber Singers and the Quartet, two smaller groups within the Club, and with guitar and vocal solos by David Grimes and Dan Erickson, respectively.

After a four-hour bus ride, the Club arrived Wednesday night in Porterville for a concert at the First Congregational Church, where Frodsham had previously been director of music. Church members provided hospitality for the overnight stay. Thursday morning the Club sang during two assemblies at Clovis High School. The high school has a very good choral group, so the students were very appreciative of the program.

Another four-hour ride brought the Glee Club to the Trinity Presbyterian Church in San Carlos for dinner and a concert. In order to ascend the final 30 feet up a hill to the church, the heavily laden bus had to be evacuated. Again the club members stayed at hosts' homes. The Glee Club sang at the beautiful new Gunn High School in Palo Alto the next morning. Equipped with an auditorium which would put Caltech's to shame, the experimental school had a very free atmosphere.

Following lunch at the school, the Club drove to the YMCA

Hotel in San Francisco, the most economical place to put up a large number of singers. Most members spent the afternoon roaming around the city, taking cable car rides and walking along Fisherman's Wharf. Enthusiasm

(Continued on page 3)

Barnard College President Is Y Leader of America

by David Lewin

Rosemary Park, president of Barnard College and vice-chancellor-elect of UCLA, arrived on campus yesterday for a three-day visit, part of the Caltech Y's Leaders of America program.

Yesterday she addressed the undergraduate student body on the topic, "Undergraduates, Are You Superfluous?" At the noon luncheon she discoursed on the subject, "Of Instant Meaning and Absolute Truth." After eating dinner at Page House, Dr. Park was received by students and faculty at the Athenaeum, the affair being hosted by Dr. DuBridge.

She will address the Grad Sack Lunch group today on "The University: the Parts Defy the Whole" in the Y Lounge at noon. An informal discussion open to all will be held in the Y Lounge from 2 to 4 p.m. She will eat dinner at Dabney House and will give a talk open to the public in Beckman Auditorium on the topic, "Whose University?" Tomorrow she will eat lunch with members of the Caltech Y's Girls' School Committee. At three she will be present at a special coffee-hour. Dr. Park will be the featured member of a panel discussion on "What is the Locus of a Faculty Member's Loyalties?" Others on the panel are Prof. Leon Silver of the Geology Dept., Prof. Richard Dean of Mathematics, Roger Noll of Economics, and Prof. Paul A. Saltman, a biochemist from USC.

Dr. Park comes from a family with a record of serving the

Teckers Depart With Scrippsies for Talk

Camp Debeneville was last weekend's gathering place for 52 Teckers, 40 Scrippsies, and assorted faculty members during the annual Caltech-Scripps Conference. Being an opportunity to meet live (and intelligent) girls in a relaxed atmosphere, the whole experience was a rather welcome relief from the monotony of life at Caltech.

Heaven

The conference was a well-run mixture of planned and spontaneous activities with a couple of cold, sleepless nights thrown in. The Teckers departed in two buses Friday afternoon; the buses stopped at Scripps and the girls joined the guys for the two-hour ride to the campsite. That evening the group witnessed the short play "The Chairs," by Eugene Ionesco, with the ending omitted. The conference leaders then invited the participants to illustrate their thoughts about the play on large sheets of paper put up around the walls of the main lodge. Soon everyone had milled around and had picked out his favorite phrase; ten different groups materialized, each writing an ending to be performed the next morning. The endings showed that all ten

groups shared Ionesco's sentiment.

Hell

Saturday lunch was just beginning (some of the diners' spaghetti-laden forks were already enroute to their oral destinations) when Dan Metlay, a real sparkplug throughout the conference, leaped up on his bench to shout: "Don't eat! Don't eat!" He proceeded to tell the story about the people in Hell who couldn't eat because their arms were stiff, the people in Heaven who could eat even though their arms were stiff, and about the people at the conference who would eat, even though their arms were not stiff, by feeding the person across the table. Dr. Rosenstone, who was not sitting across the table from anyone, had an especially difficult time. Cleaning up afterwards took slightly longer than usual.

and Limbo

Saturday evening's slides-to-music program turned out to be the high point of the conference; no one spoke for a moment after the lights went back on. The conferees then expressed the emotions the slides evoked in them in any way they wished, and many did so by writing, drawing, or squeezing clay. At this time the atmosphere seemed to change to one of great intimacy and shared emotions. Later that evening, a 45-minute series of films containing many varied visual images set to music proved very effective against the background of this mood. The evening ended with a spontaneous outburst of dancing and limboing—almost a relief from the previous seriousness.

Sunday morning's highlight was individual performances of haiku poetry—short poems that were visually illustrated or acted out. Following this spectacle was a long, serious round-table discussion with about 50 participants, where the exchange of ideas centered mostly around the lack of, and fear of, communication between people. The conference ended on a note of good will and mutual understanding—both individually and collectively—between the Teckers and the Scrippsies. Much of the fear of each other, which they all had at the beginning of the conference, had worn off.

Charity Drive Won by Lloyd; Playmate Too

The ASCIT charities drive ended with the not-surprising result of Lloyd House giving more than twice as much as its nearest competition, both in total money given and money per house member. Totals this year were \$646.90 for the West-side Study Center, \$1091.61 for Planned Parenthood, and \$373.00 for the World University Service.

Lloyd amassed its impressive total of about \$690 by such means. (Continued on page 4)

Notices

OFF-CAMPUS UNDERGRADS

Get your EPC course and instructor poll from Louise Hood in Winnett Center. Keep the results honest!

WORK SPRING VACATION

in an isolated, poverty-stricken Mexican town. Several Caltech students will be able to participate with 50-60 high school students. The project will consist of constructing a combination warehouse-thrift shop and a home for a mother and 13 children, and remodeling a medical center. Interested students should sign up in the Y office immediately.

WHO'S AFRAID OF NARCOTICS

will be the topic discussed by Dr. Donald Tweedie, practicing psychologist, at the Caltech Christian Fellowship meeting in Winnett Clubroom No. 2 at 7:00 p.m. on Friday, February 24, 1967.

TECHNICAL STAFF—DRAMA CLUB

The Drama Club DESPERATELY needs people interested in technical work, lighting, set construction, etc., for productions. More fun than building Interhouse. No ex-

(Continued on page 3)

Thursday

2-4 p.m. Informal discussion open to all
8:15 p.m. Beckman Auditorium "Whose University?" (Open to the public without charge.)

Friday

12-1:30 Luncheon with members of Caltech Y's Girls' School Committee at Athenaeum
3-3:30 Coffee Hour Winnett Center
3:30-5 Panel Discussion: "What is the Locus of a Faculty Member's Loyalties?" Rosemary Park and Leon T. Silver, Prof. of Geology, CIT Richard A. Dean, Prof. of Mathematics, CIT Roger G. Noll, Instructor in Economics, CIT Paul A. Saltman, Prof. of Biochemistry, USC

having been an instructor in German to president of Barnard, she finds the problems of student-faculty-administration relations quite interesting.

Editorial

How Shall We Learn?

After many weeks of haggling over concepts, wording, and format, the EPC has distributed its instructor-and-course evaluation questionnaire. Now is the time for you to decide just what an education at Caltech really means.

The poll rightly centers around the technical functioning of the course at Caltech. Questions are posed concerning the instructor's presentation, his preparation, organization of course material, and testing procedures. Here we can objectively criticize the teacher and the course in well-defined areas. Much will accrue from the poll if, and only if, nearly all students respond. Courses might be changed, teachers might evaluate their methods and improve them, and, in general, a meaningful dialogue will have been initiated between professor and student. Admittedly, many faculty members gain from experience and eventually succeed in developing inspiring methods. We find no fault with them; moreover, you must recognize their excellence when completing the poll.

Interminable lectures

Since the poll provides a direct feedback line to the faculty, the opportunity presents itself to go beyond the poll and consider the entire philosophy of education at Caltech. Just how much benefit do you derive from going to lecture after lecture and hearing material that in most cases exists in countless texts? Is anything to be gained from sitting in a classroom and frantically copying the copious material presented by the professor, especially when very few of us are able to copy and understand at the same time? In fact, if such is the case, then are the instructors doing any teaching at all or are they merely transcribing a textbook onto the blackboard?

"To be or not to be . . ."

We here quote President DuBridge. "It is important to the national interest to have many good universities, and it is desirable for every college and university to get a little better. But it is equally important that there be a few institutions of really superb quality. We must, for the sake of future generations, have a few outstanding leaders, a few institutions that are blazing the trails of the future." The crucial question is thus whether Caltech is one of these few outstanding institutions.

However you may answer, we do feel that the medieval concept of lecture stifles the learning process: in order for Caltech to remain in the forefront, new and better methods must be explored and implemented. This subject is particularly relevant this week, for the YMCA has brought us Dr. Rosemary Park of Barnard College. In her first address, Dr. Park showed us that the lecture system is hardly the only way. She urged us to accept all forms of exchange: lectures, seminars, tete-a-tete conversations, and meditation. We agree.

Dr. Park is most familiar with education at an institution quite unlike Caltech. She is a veritable fountain of information to students here. Bother her. Question her. Then try her ideas on the faculty here yourself, or relay them through your local EPC member.

Publish or perish

A final point arises as to whether the results of the poll should be available to the student body. Arguments exist both ways. We feel that if the poll is conducted responsibly, undergraduates can certainly appraise the results in an adult manner. This process of publishing the results of a campus-wide poll works well at many other institutions, Stanford being among them. When undergraduates pay \$1800 each year to receive an education, they have a right to the results of a poll they themselves conduct. We therefore urge you to convince your EPC representative to vote for publication of the instructor-and-course poll.

—Les Fishbone
Kirk Benson

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 both 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

column. Column writers represent their own opinions only and not necessarily the opinions of the *California Tech*.

The *California Tech* welcomes all letters, whether or not they agree with editorial opinion. All letters must be signed, but the author's name may be withheld from publication on request. Letters are edited (or left out) solely on the bases of space, decency, and the desire to present letter opinions in proportion to the amount of mail received. As with columns, the opinions stated in letters are not necessarily those of the *California Tech*.

Savings in Line For Students At Tech Bookstore?

by Hecht

Recently a suggestion that students be given a discount at the bookstore has been circulating among student groups. While our bookstore charges prices on books designed not to undercut local stores, some other college bookstores give students a discount. Prices on supplies are intended to give the student a break. At present about sixteen to twenty thousand dollars a year is being cleared by the bookstore, with about two thousand going to ASCIT and the rest going to the endowment fund to repay the cost (about \$250,000) of the section of Winnett it occupies.

Kermit A. Jacobson, Director of Procurement, feels that giving money to the student body collectively (and to scholarships, as was done before the building cost had to be paid off) is more desirable, because the discount would not be large and because of the many other people serviced by the bookstore. A good deal of purchasing is done through the bookstore by JPL and the various departments of the institutes. It now has an excellent reputation as a technical bookstore, and receives orders from alumni living nearby. Jacobson stresses that the Institute receives no revenue from the bookstore, aside from repayment of the construction costs.

While the overall volume of some \$400,000 is about two-thirds books and one-third supplies, the margin of profit on books is less than that on supplies, so that profits come about equally from each. Other revenue comes from photographs, cards, and incidentals. Although Jacobson declined to estimate the percentage of the volume supplied by the student body, it seems reasonable to say about half, and quite possibly less, considering the JPL purchases.

The basic criticisms expressed are objections to making those not on scholarships chip in to help out those who are, and the payment to ASCIT. The discounts would give benefits directly to all students, and hopefully give at least some moral satisfaction at the beginning of the term. The faculty and JPL might not be happy with this arrangement, and expect things to be sold at cost to them. The problem at present is made simpler by the lack of money to distribute.

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AUDIENCE

by Roger Goodman

Guitarist John Williams performed a series of pieces written over a time span of four centuries, Saturday night at 8:30 p.m. in Beckman Auditorium. The works were received by a near-capacity crowd, which had undoubtedly been attracted to some extent by the novelty of a concert for classical guitar.

Budding Segovia

Williams's entrance brought the audience to a tense silence; only after several minutes of last-minute tuning, adjustment of position, and flexing of fingers did the artist begin to play his first selections, two dances from Praetorius's *Terpsichore*. The lute music was accomplished with great precision and intelligent intonation by Williams, whose countenance betrayed his efforts toward perfection.

The uneasy mood of the audience was not noticeably relieved upon the completion of the Praetorius. However, an error made on a trill in the next selection, an overture by Weiss, seemed to relieve the tension somewhat. From this point on, Williams became confident; the crisis was over. His beginning of the Scarlatti sonatas was immediate, their execution flawless, their performance well-received. The familiar harpsichord sonatas sounded rather refreshing when played on the new instrument.

But the rehearsal!

At this point Williams felt particularly confident, announcing, in a pleasant Australian accent, that he had chosen to play Bach's fourth, instead of his third, lute suite. The more difficult suite attained a new height of richness due to the quality of Wil-

liams's transcription and execution.

After a short intermission, Williams played two rather novel pieces. The first, the *Andantino Variato* by Paganini, employed a complete passage of artificial harmonics. The second, a guitar partita by Stephen Dodgson written in 1963, showed that the classical guitar can be well-suited for contemporary music.

Williams closed his program with Albeniz's *Asturias* and *Sevilla*, the latter of which is a "standard" for most guitar concerts. Apparently, the audience was most accustomed to hearing Spanish music on the guitar; Williams made three curtain calls, and elicited a wave of excitement when he appeared for his first encore, *Spanish Dance #5* by Granados. Still the audience would not let him go, and he closed his tremendously successful night with a short piece by Manuel Ponce.

Age teaches

John Williams shows brilliance: brilliance in execution, brilliance in choice of program, and brilliance in his understanding of the public. If he has a fault, it is one which he can overcome only with age; bespectacled, young (26 years old), ostensibly mild-mannered, John Williams remains a singularly uninspiring figure when not engaged in playing his instrument. Although capable of withering a late-coming front-seat customer with a stern glance, he hardly induces awe and respect as can Segovia. However, with increasing age, Williams certainly will have an increasingly good chance to succeed the Old Master.

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Candidates for bachelor's, master's and doctor's degrees in any of the above fields are invited to schedule interviews with the NRL representative who will be in the

placement office on

March 2

Those who for any reason are unable to schedule interviews may write to The Director (Code 1818), Naval Research Laboratory, Washington, D. C. 20390.

Huttenback Discusses College Housing Tour

Master of Student Houses Robert A. Huttenback is taking a new look at the Student houses. He has several ideas that he would like to see implemented, provided that they receive student support.

"For any institution to remain viable and virile it is necessary that it reassess its purposes and modes of operation from time to time. The moment has probably come for such a re-valuation of the Caltech Student Houses," says Huttenback. To effect this purpose he is going to send one student from each house to visit various campuses throughout the country to investigate their approaches to the question of student housing. This technique was used before the opening of the original Student Houses at Caltech, and Huttenback thinks its re-implementation will allow us to judge those student house traditions and procedures in need of change and those worthy of preservation.

The students will visit Harvard, M.I.T., Yale, Amherst, Swarthmore, Wesleyan, Williams, Bowdin, Rice, Santa Cruz, and Pomona. The students who go will have to be doing well academically, because the trip will take about a week of school time. Of course, seniors will not be going.

Moving on to different areas of change, Huttenback commented, "The Master of the Student Houses should be more involved with setting the tone for life in the Student Houses, to be more the intellectual leader than the disciplinarian." He has proposed such changes as the creation of graduate-undergraduate student houses. "We do not take sufficient advantage of the fact that we are an academic community. We have allowed ourselves to become excessively compartmentalized. Why can't we have one student body of 1500 rather than two of 700 and 800 respectively?"

On the Road Moffet Speaks Monday About Radio Telescopes

(Continued from page 1)

mounted as they crossed the bay into Oakland for a concert at the College of Holy Names, where the appearance of real live girls was eagerly expected.

Afterwards most Teckers went out on the town, either visiting nearby Mills College or going back to San Francisco, where many assessed the pulsating rhythms and strobe-lights of the Fillmore Auditorium. A fortunate few took the last cable car from downtown. It was an exciting ride, including hanging on the side of the cable car as it rounded corners and having the conductor ask two reefer-smoking passengers to "blow some of the smoke this way, baby." One sightseeing group, noticing that they had members from each section of the Club, serenaded passengers on a cable car and strollers near the waterfront with a capella selections.

The trip back was not without excitement, including spontaneous singing of everything from "Moon River" to J. Kent Clark's ditties.

Dr. Alan T. Moffet, assistant professor of radio astronomy and staff member at Caltech's Owen Valley Radio Observatory, lectured to a near-capacity audience in Beckman last Monday night. The lecture was titled "Radio Telescopes: New Windows on an Old Universe."

The two major problems facing the designer of a radio telescope are sensitivity and resolution. The total power reaching the earth from interstellar radio sources is about 1500 watts. By comparison, the power from the sun is about 1500 watts per square meter. Consequently, a large gathering surface is needed, situated in an area as free as possible from interference. The resolving power of a telescope is determined by the ratio of aperture size to the wavelength being received. For the eye, this ratio is 6600, compared to 3200 for JPL's 200-foot radio telescope

at Goldstone when operating at its minimum wavelength of two cm. The minimum wavelength is determined by the size of the deviations from a perfect parabola and by the size of the mesh used for the reflector if it is not solid.

Dr. Moffet next surveyed the radio telescopes of the world, both built and planned. He continued by explaining that the three natural sources of radio wave are the radiation of all warm bodies, ionized gases, and synchrotron radiation from charged particles moving in a magnetic field. Most of the radio waves received from radio galaxies and quasars comes from the third source, which radiates much more strongly at radio than at visible frequencies.

He then noted that single, movable antennas had been developed as far as possible and explained the three advances being explored. The first is the use of large fixed antennas, ranging from a 600-foot dish carved in the earth to a 600 by 200-foot cylindrical parabola, to a 35 by 300-meter standing reflector.

The second, the unfilled-aperture method, is possible since the position of a source can be determined by measuring relative signal strengths at all possible distances, up to the size of the aperture, and at all possible angles. This can be done by arranging a number of antennas either in a circle, a cross, or a T.

The third, aperture synthesis, is possible since not all the measurements need be made simultaneously. The latter two methods sacrifice sensitivity for resolution. The best resolution obtained thus far is one-fiftieth of a second of arc, as good as any optical measurement, using a baseline of 70 miles. The third method can be improved by using earth-rotation synthesis, since the rotation of the earth will carry each of a pair of antennas around each other in a circle in a day. This is the basis for Caltech's projected interferometer at Owen Valley.

Dr. Moffet concluded by wishing that scientific priorities were determined by the size of the object of study.

Notices

perience and limited time necessary. Please call, write, or see Chris Dede, 7 Ricketts, by noon Saturday.

PASADENA CHORALE NEEDS PEOPLE

The Pasadena Chorale has openings for more people. Auditions will be held for the next three weeks on Monday nights at about eight o'clock at the Allendale School, 1135 S. Euclid Ave., Pasadena. A musical background is a must.

SUMMER INSTITUTE AT UCLA

A Space Technology Summer Institute will be held at UCLA from June 16 through July 28. About 50 will participate, and scholarships will be available. Candidates must be undergrads with a minimum of three years in engineering, mathematics, or the physical sciences. Get details at the Registrar's Office.

LEADER OF AMERICA

Abraham Kaplan, professor of philosophy at University of Michigan, will be here May 1-4. Students wanting to work on the planning committee will meet Friday at noon in the Y office. Transfer your meal if necessary.

GO CLASS

for anyone interested. This Friday at 4 p.m. in the YMCA Lounge.



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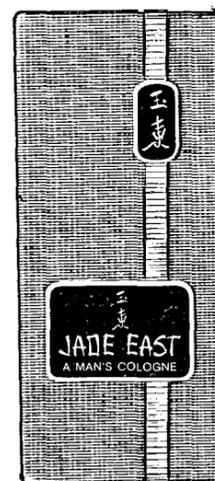
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The Critical Ear

by Bill Atwood

Last Sunday the Quartetto Italiano performed in Beckman Auditorium for a fairly large and over-appreciative audience. The group played two contemporary works by Stravinsky, **Three Pieces for String Quartet** and **Concertino for String quartet**; a romantic work by Schubert, **Quartet in A minor** (Opus 29, no. 13); and the classical **F Major Quartet** by Beethoven (Opus 18, no. 1). The audience's "enthusiasm" for the group inspired them to play a movement from the **F Major Quartet** by Dvorak.

The concert opened with a somewhat poor rendition of the Schubert. The group failed principally in intonation and ensemble. They overstressed many passages, varying tempos and dynamic levels to exaggerate this work. The musicians were not entirely successful in projecting this rather long piece by Schubert.

The central portion of the program consisted of two early Stravinsky works. The first was somewhat of a musical joke, and was tedious because of a constant repetition of a four-tone melody. The second was generally disorganized and conveyed little. The third and final was the most worthwhile, exhibiting a more serious tone, better organization, and a definite direction of motion.

Driving rhythm

The third piece by Stravinsky was indeed the superior work. The use of a driving rhythmic structure provided a definite unity. Fast changes in mood gave this work vitality and freshness missing in the former selection.

The formal concert closed with an above-average performance of the Beethoven **Quartet in F Major**. Again the quartet seemed a little disorganized, not doing full justice to this work. The audience listened again to a

somewhat distorted, yet passing performance.

After three curtain calls the quartet prematurely consented to play an encore, **The F Major Quartet**, by Dvorak, which was by far the most spirited and light-hearted piece in the program. Unfortunately, the group failed in projecting this work with an awareness for the music. Typical of many European shows, their performance was accompanied by unnecessary and somewhat distracting affectations.

Astrid Will Be at Lloyd

(Continued from page 1)

thods as having alley challenges for a keg, won by Decker's alley with \$13.25 per man, getting the frosh to go after their T.A.'s, and inviting a couple of "black power" advocates over to the house for dinner and a discussion sparked largely by questions from Mike Meo and Les Fishbone. The methods worked to the extent of increasing Lloyd's own average of the previous year by almost 30% from \$6.40 to \$8.30 per member. The nearest competitor in total money given this year was Page with some \$310, but because of Page's large membership, it was somewhat further down in average money per member. Averages for each house were: Lloyd, \$8.30 per man; Blacker, \$3.41; Dabney, \$3.12; Page, \$2.60; Ruddock, \$2.52; Fleming, \$1.44, and Ricketts, \$1.33.

The gung-ho Lloydies are following up their victory by making arrangements to have faculty members serve at the dinner that the bunny will attend, and by inviting the cheerleaders also.

This is the sixth year in a row that Lloyd has won the drive, including its first year of occupancy when it was House B.

Trust thou? Voluble Feynman Speaks At Frosh Dinner Forum

by Mike Henerey

Would you believe Caltech needs an underground? I wouldn't, despite a very tough-sounding editorial by Mr. Farber, the first issue of **Notes From the Underground** simply doesn't live up to its advertisements. Mr. Farber is probably right that some of his articles might not have reached the printer in the **California Tech**, but certainly not for the censorship that he imagines.

Innocuous. That is the word for it. An underground paper is a great idea . . . if you need it. After all, a front page story in the **L.A. Free Press** last week praises them to the sky. But they praise them for pulling it off in high school—high school, where censorship means you can't criticize anybody. I seriously doubt that the **California Tech** will ever have to consider such censorship. Even the Parkers and Hendricksons didn't object to students hearing about pot on campus. And if not they, then who?

Whom are you hiding from, Mike Farber? Tell me; I would really like to know. I close with one piece of advice. Fix up your format; it doesn't have to look as if it were printed underground.

* * *

Would you believe that just a few weeks ago, Antioch College students finally got around to voting themselves "open dorms?" (they abolished their "women rule" in most of their men's dorms and vice-versa.) Objections to physical plant deterioration and "turning-off" conservative financial donors were put down by faculty concern for what the Antioch **Record** blithely calls "relations among hall members."

Do we need a "women rule" any more than we need **Notes from the Underground**? What do you think?

Richard P. Feynman, Nobel Laureate, etc., etc., spoke Friday at Chandler on "The Uncreative Scientist." The talk, delivered originally to non-science students at the University of Chicago, went something like this.

First, one must realize that the uncreative scientist is not useless. Many of the finest developments today are brought about by teams of men, and almost all men on these teams, even here at glorious Caltech, are uncreative.

Creativity does not ask for rules to give precision in all things; rather, it creates a system of rules to bring order out of chaos. This implies judgment. In a complicated world we must know what to record or we will never learn anything. It also requires imagination, for who has seen relativistic or quantum effects in any direct way?

What does the creative scientist have over the others? Of course, he has curiosity, but mere puzzle fascination is not enough. Children have this, but they cannot gauge a problem's

importance in the overall view. Neither can the uncreative scientist. In fact, a truly creative scientist has a better overview than the philosophers who dump on him. For they are still anthropocentric, while the Feynmans and the Gell-Manns can see the great universe in which man is a very small part.

The scientist must also have skills: just as a painter must be able to make a straight line and mix colors, the physicist must also have technique down as a second nature. The shame is that in science one can grind away a lifetime learning techniques and never look up to see and feel the subject matter.

Many scientists believe that the most important decision they must make is what to study. But the fact is that if one is really any good he will follow his nose. A Feynman can weigh the product of overall importance of a problem and his ability to solve it and make the right decision. But can he tell an uncreative man how to do it? Never.

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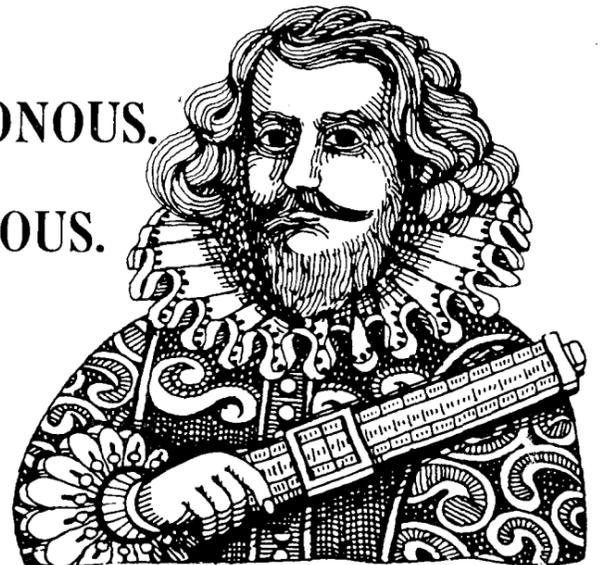
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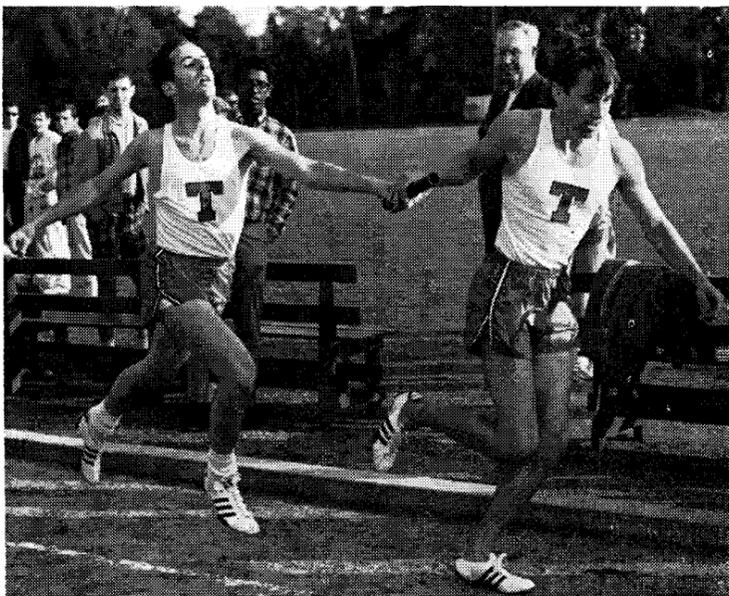
Beavers Go to Oxy for SCIAC Swim Relays

While SCIAC track men circle the ovals at Caltech this weekend, their counterparts in the world of swimming will be paddling up and down the pool at Occidental in the all-conference relays. And as surely as always, wherever there's an all-SCIAC athletic contest of any kind, there will be Caltech also. And Coach Web Emery's crew will be out in full.

If the past is any measure of the future, the Beavers are really in for bad news, for so far this season they are without a victory in five meets. Last Friday, the swimmers traveled to San Fernando Valley State for a double dual meet with Santa Monica and San Fernando Valley State. They lost to the former 58-46 and to the latter 56-48. There were some fine individual performances, however. Gregg

Wright, for example, took second place in the 1000-yard freestyle, lowering the Caltech record to 11:59.8. Wright also bettered the school 200-yard backstroke record with a time of 2:14.9. Henry DeWitt was barely touched out for first place in the 50-yard freestyle. DeWitt also took second in the 100-yard freestyle with a time of 50.4. Frosh Mabry Tyson and Mike Stefanko looked as though they might finish one-two in the 200 yard breaststroke before they were touched out for first. They finished second and third, respectively. In addition Tom Davis and Tyson came in third and fourth, respectively, in the 200-yard freestyle.

Divers Steve Johnson and Allen Hartstein did exceptionally well by finishing one-two for Tech in the diving competition. Although the Beavers lost both meets, they showed definite signs of improvement as they have since the beginning of the season. Perhaps the past is not a measure of the future. If not, the Beavers may surprise a lot of people at Oxy on Saturday.



—photo by Engebretsen
Fred Lamb hands off to anchorman Jim Andrew in the mile relay against Redlands Saturday. Looking on is sports editor Creasy.

Caltech Hosts SCIAC Relays This Weekend

Cindermen from the six member schools of the Southern California Intercollegiate Athletic conference at Caltech this Saturday for the annual running of the SCIAC Relays. Competition promises to be keen as athletes from Caltech, Claremont-Harvey Mudd, Occidental, Pomona, Redlands, and Whittier vie for victory in six relays and seven field events. Action gets under way at high noon at the Beavers' oval.

Caltech got its first taste of competition and defeat this season last Saturday in a dual meet against Redlands. The Bulldogs virtually murdered the Teckers. The final score of the seventeen-event meet was Redlands 113, Caltech 31. Thanks to tireless Pete Cross, however, the Beavers did manage to avoid being completely shut out in first place performances. Cross won two events—the mile and the two-mile runs; in addition, he placed second in the 880-yard run behind Redlands' Elliot Mason, one of SCIAC's most talented track stars. His clocking in the

mile was 4:32.9; he hit the tape in the two-mile in 9:54.0; his time in the 880 was 2:01.5, four seconds behind Mason.

Coach Paul Barthel was impressed with performances by shot putter Mike Ruth, miler Dave Kolb, and sprinter Jim Andrew in addition to Cross's feats of stamina. Ruth heaved the sixteen-pound shot 43'8 3/4", his best to date and good for third place. Kolb finished third behind Cross and Redlands' Dave Newmeyer in the mile with a time of 4:42.1. Andrew looked good in both the 440 - and 220-yard dashes in addition to the 440-yard and mile relays.

Caltech may be the weakest competitor in the conference relays on Saturday, but certain individual Beaver performances will surely be worth watching. There will be an extra added attraction which should be quite interesting. It is called the 440 yard weight men's relay and is made of competitors in the shot put, discus, and/or javelin. They even break the sixty second "barrier" sometimes.

Baseball Season Starts Saturday

The 1967 baseball season of the Caltech Beavers gets under way this Saturday as the team travels to California State College at Fullerton for a doubleheader. Both games will be of seven innings, and the prospect is good for a Caltech victory. Tech's ballplayers have been practicing for about one month now and have showed encouraging signs of improvement as their debut nears.

What a man!

The hub of the relatively small squad (typical of all Caltech intercollegiate athletics) is 1966 all-conference shortstop Lonnie Martin. Lonnie is a great all-around athlete; he was last fall's all-SCIAC offensive end in football despite sitting out the last few games with a broken ankle; he throws the discus for Caltech's intercollegiate track team; he fields a baseball like Maury Wills (although Lonnie is a bit slower than Maury); and he can hit a ball two country miles. Martin is the hub all right, but a hub is no good unless it has spokes to support it.

Sports what?

As the Sports Editor of the Tech sees it, the following fellows will provide that support if the Beavers are to realize a successful campaign; Les Fetting is a big, strong, recently-married pitcher who plays third base when he isn't hurling strikes. While Les may not be quite as good with the glove as Lonnie, he has been known to hit farther. Jay Chapyak will have to come through too if the team is to have a winning season. Chapyak appears to be more than ready as he has been hitting amazingly well in practice. Jay is an all-around man and can play infield or outfield with equal ease. Probably the best outfielder is junior Kermit Kubitz. Kermit has an excellent arm from the outfield to any base, but he will have to improve his hitting somewhat to increase the probability of Tech's success. In addition to these returning lettermen, other members of last year's squad who will play a vital part this season include Bob Firestone, Phil Paine, Steve Savas, and Craig Helberg. This year's frosh hopefuls include Bruce Samuelson, Gene Fujimoto, and Charles Creasy.

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by Creasy

Veterans on parade

Believe it or not, the varsity basketball team of the California Institute of Technology is actually favored to win tomorrow as they put the last of their pride on the line against the Caltech Coffeeheads in Caltech's Scott Brown Gymnasium at 7:30 p.m. The game is part of a campus-wide effort to raise money to contribute toward the construction and operational expenses of the proposed Caltech Coffeehouse, which is scheduled to open early in March.

The nine members of the varsity should have their best night ever as they pit their skills against the likes of interhouse basketball "stars" who play by rules of their own, graduate students who will be taking advantage of the opportunity to relieve their frustrations, and even faculty members who think they're still young enough to compete. The eager Beavers (that's eager with an m) didn't have a very prosperous season this year, winning only about 20 percent of their regular season games. They, too, have some frustrations to be relieved. The result should be a rough, illegally played, fantastically funny, and immensely interesting contest, well worth the 25c admission fee.

Finally, for once you might get the chance to see two evenly matched cage squads tear themselves to pieces, and then laugh when the game is over.

Beagle Beaten

C. Alan Beagle, Caltech frosh, who is in some opinions the best grappler to ever attend Tech, had won thirteen straight wrestling matches before last Friday. On the evening of that fateful day, however, Beagle's perfect record was blemished when he lost by decision to a Whittier wrestler whom he had pinned only two days earlier. This defeat occurred at a tournament at Biola College. After losing, Beagle was placed in the consolation division, which he won by taking his other two matches. He placed fifth in the overall competition in the 177-pound class. Another promising Caltech frosh, Richard Thornberry, managed to grapple his way to a fourth place finish in the 152-pound division.

Flems Flying High

Fleming House retained possession of the theoretically rotating Discobolus Trophy for what seems to be the nth straight week by defeating Blacker in softball last Monday 5-3, thus increasing their lead over second place Page by eight points. The point spread by house is: Fleming, 19; Page, 11; Blacker, 5; Lloyd, 4; Ricketts, 4; Ruddock, 2; Dabney, 2. The Flems' next opponents are the men of Ricketts, who have challenged in wrestling, softball, and—Are you ready?—horseshoes.

Cogent Comments Welcome

Readers of the Tech are invited by the Sports Editor to submit essays, opinions, or any cogent comments pertaining to Caltech varsity sports for consideration for publication in this column. Material submitted should be titled "Much Ado About . . . (Your Subject)" and should range in length from 400-500 words. Mail to the Sports Editor, in care of the California Tech.

A strong Occidental squad defeated the Caltech varsity tennis team last Saturday by a match score of 8-1. John Healy saved the squad from a shut-out by defeating his opponent in the singles division, 12-10, 6-4, in a gruelling match. Second doubles was another extended match as Martin Frost and Jim Buckholtz engaged Oxy's pair in a defensive duel, but finally lost 8-6, 6-1.

On the same day, a skeleton Caltech frosh team traversed to Occidental for a dual tennis meet and were shut out 9-0.

First man Pete Youtz salvaged

one set in his see-saw battle with Barry Johnson before succumbing 6-1, 1-6, 6-1. Guy Duesdieker likewise managed to capture one set, before losing 1-6, 6-3, 6-4. Craig Tyner, suffering from a minor back injury, was defeated 6-1, 6-4. Donald Putnick managed to win only one game while losing in straight sets. Kirk Benson did worse and was trounced.

Youtz and Duesdieker teamed to win one set in doubles before bowing 6-2, 3-6, 6-4. Tyner and Benson were swamped 6-1, 6-2, while a third powerful doubles team from Oxy annihilated Mike Sperry and Putnick 6-1, 6-0.

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CAMPUS INTERVIEWS

March 2, 1967



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DEAR REB:

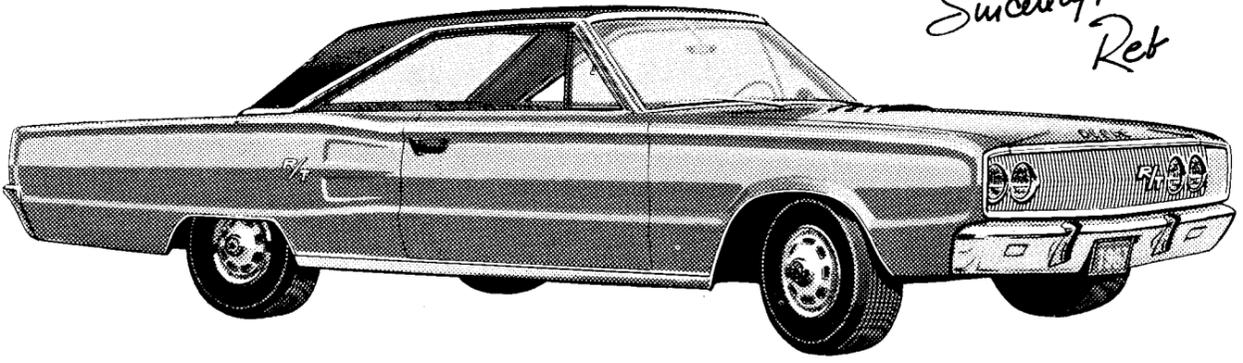
I'm a former World War I Air Ace, and when it comes to buying a new car, I can really fly off the handle. Frankly, the whole thing is a dogfight for me. I'm tired of piloting my present car and have got my sights set on a performance model that'll let me strut in style. But its price has got to be solo it won't shoot me down. I'm banking on you to help me find one, Reb.

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