Northwestern Wins Debate Tourney Here.

The Third Annual Caltech-Oberlin Tournament, held this weekend, surpassed all expectations for efficiency and keen competition. The team of David Zarefsky and the Denger of Northwestern University took the high 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. It certainly set records for the largest number of distant teams to a California tournament. It is interesting to note that seven of the sixteen teams in the eliminations 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) crept up, this year the program ran perfectly. As well as predicting the preliminary debates giving山村 around the city, taking care of cars and walking along Fisherman’s Wharf, Enthusiasm came more than 1000 miles to participate. This is perhaps the most interesting part of the program, 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 preliminary round. It certainly set the outcome of 13 of the 15 eliminations rounds.

This lends credence to the theory of computer-chosen finalists which states that the program of the tournament is a great deal more important than the length of the eliminations rounds.

The Caltech Glee Club made its triumphant return Sunday night for 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 coo Miss Patrica Vurney, contralto who was soloist for the Alto Rhapsoody by Brahms.

The repertoire consisted of sacred music, songs, spirituals, and selections from "My Fair Lady." The concerts were highlighted with songs by the Chamber Singers and the Quarters, two smaller groups within the Club, and with guitar and vocal solo by David Oze 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 at 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 attend 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 a refrigerator, they were able to 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. Members spent the afternoon roaming around the city, taking care of cars and walking along Fisherman’s Wharf, Enthusiasm.

(Continued on page 3)

Barnard College President Is Y Leader of America

by David Levin

Rosemary Parker, president of Barnard College and vice-chancellor-elect of UCLA, arrived on campus yesterday for a three-day visit, part of the Caltech Leaders of America program. Yesterday she addressed the undergraduate student body on the topic, "Undergraduates: You Are Superheroes!" At the noon hour she discussed the subject, "Of Instant Meaning and Absolute Truth." After eating dinner at Page House, Dr. Parker was received by students and faculty at the Athenaeum, the affair being hosted by Dr. DuBridge.

She will address the Great Sacrum Lunch group today on "The University: the Parts Defy the Whole." She will give the talk a two and half hour luncheon 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 Dining 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 Girl’s 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 Lore of a Faculty Member’s Loyalties?" Others on the panel are Prof. Leon Silver of Brown, Yale, and Columbia. She has been director of music. Church members provided hospitality for the overnight stay. Thursday morning the Club sang at two assemblies at Clovis High School. The high school has a very good choral group, so the students were very appreciative of the program.

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Savings in Line For Students at Tech Bookstore?
by Recht

Recently a suggestion that stu-
dents who purchase books in the
bookstore be surveyed has been intro-
duced. A more serious question is raised
by the purchases of students who have
copies of books designed not to under-
cut the price of books bought at
off-campus outlets. The bookstore
gives students a discount.
Prices on supplies are in-
creased, so that the students pay
a break. At present sixteen hun-
dred books are normally not in-
going to the endowment fund to
from the bookstore, and the
section of the bookstore is
up.

Mr. K. A. Jacobson, Director of
Procurement, feels that giving
money to the student body
collectively and to students,
as was done before the building
closed, would be paid off more
reasonably. The demands of the
bookstore are too great.

While the overall volume of
some $900,000 is about two-thirds
books and one-third supplies, the
supplies are rising faster than
that on supplies, so that
receipts are increasing.
Other revenue comes from
photographs, cards, and in-
currences.

A good deal of pur-
ishing is done through
organizations, and the
various departments of
students have a
estimation as a
bookstore, and receives orders
bookstore.

A point of

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Dr. Park is most familiar with education at an institution such as Caltech. She has a veritable

On a postcard, the author's name
appear, but the author's name
will appear on the title page.

TheUneven Motion of
ren

Audience

Guitarist John Williams per-
formed a series of pieces written
over a time span of four centu-
ties, Saturday night at 8:30 p.m.
with Professor Williams, whose
time in this area.

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advantage.

One might point out that
the audience was not necessarily
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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-evaluation 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, Brown, Williams, Wellesley, William, Bowdoin, 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 (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 rear-end-smoking passengers to "blow some of the smoke this way, baby." One sightseeing group, noticing that they had members from each of the Clubs, serenaded passengers on a cable car and strolled near the waterfront with a cappella selections.

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

These U.S. Air Force officers are getting what they want out of life. You can be one of them.

What are they doing? They are performing a job of importance. Hour after hour. Year after year. Many of them will work 20 years or more. The fruitful part of a man's life. Will yours be fruitful and creative? Or just spent?

You're going to college to do something constructive, important. And you can be sure of the U. S. Air Force. Start now in the Air Force ROTC program on your campus. Your Professor of Aerospace Studies will explain the variety of career opportunities, Pilot, Navigator, Engineer, Science, Administration.

If you get in on it, you get paid to be part of the most exciting technological breakthroughs of all time. You'll become a leader, an officer in one of America's most vital organizations...the U. S. Air Force.

You can be part of the Aerospace Age when things are most exciting...at the beginning. While you serve your country, the whole universe will open up to you.

A 2-year Air Force ROTC program, and the 4-year program has new attractive scholarship provisions.

Do not let your parents waste their working years. But you don't have to be one of them.

If she doesn't give it to you... —get it yourself!

JADE EAST

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, titled "Radio Telescopes: New Windows on an Old Universe," was an exciting introduction to the design of a radio telescope and its 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 1200 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 6000, compared to 2300 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 waves are the radion 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 come 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 300-foot dish carved in the earth to a 600 by 200-foot cylindrical parabola, to a 35 by 30-meter standing reflector. The second, the unified-aperture method, is possible since the position of an source can be determined by measuring the signal strength 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 only if all the measurements need be made simultaneously. The latter two methods sacrifice sensitivity for resolution. The best resolution obtained thus far is one-tenth of a second of arc, as good as any optical measurement, using a baseline of 70 miles. 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.

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**The Critical Ear**

by Bill Atwood

Last Sunday the Quartet from Illinois performed in the Main Auditorium for a fairly large and over-appreciative audience. The group played two contemporary works by Stravinsky, Three Piano Pieces No. 1 and Concertino for Strings and Concerto, and two over-appreciative works by Beethoven: the Major Quartet by Beethoven (Opus 18, no. 1). The audience's "enthusiasm" for the group inspired them to play a movement, quite a somewhat poor rendition of the work. Ths musicians were not unified in their interpretation of the music. The third piece by Stravinsky, an above-average performance of the Beethoven Quartet in F Major. Again the quartet seemed disorganized and conveyed little disorganization and conveyed a driving rhythm that was tedious because of a driving rhythm. The third piece by Stravinsky, which was Dvorak, which was by far the most spirited and light-hearted piece on 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 affections.

Astrid Will Be at Lloyd

(Continued from page 1)

thoughs as having ally challenges for a keg of Beechwood Aged, anyway. The third and final was a little disorganized, not doing any more than we need Notes From California Tech, but certainly not for the censorship that he imagines.

innocuous. That is the word for it. An underground paper is a great ally for 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 criticize anybody. I seriously doubt that the California Tech will ever have to consider such censorship. Even the Parsons and Hendrickson's didn't object to students hearing about pot on campus. And if not 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 foam on your beer? Now let the foam tickle your nose and feel the smoothness you think?

You will be AUTONOMOUS and AUTOCHTHONOUS. Your rewards will be AURIFEROUS. You will have the opportunity for intellectual ALLOGAMY.

Renaissance types are definitely welcome at Philco! We need scientists, mathematicians and engineers ... dreamers and do-ers ... to help direct the world wide efforts that have made us a major company fast approaching $1 billion in annual sales to consumer, industrial and government markets. We are a major subsidiary of Ford Motor Company. We have 10 divisions whose diverse interests range from industrial to educating future leaders and engineers ... dreamers and do-ers ... to the moon to educating future leaders and engineers ... dreamers and do-ers ... to the moon. We need scientists, mathematicians and engineers ... dreamers and do-ers ... to the moon to educating future leaders and engineers ... dreamers and do-ers ... to the moon.
Beavers Go to Oxy for SCIAC Swim Relays

While SCIAC track men circle the owls at Caltech this weekend, their counterparts in the world of swimming will be piddling up and down the pool & Occidental in the all-conference relays. And as surely as divvies, 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 ready for bad news, for so far this season they are without a victory in five meets. Last Friday, the swimmers traveled to Cali, Fernando Valley State for a double dual meet with Santa Monica and Sam Fernando Valley State. They lost to the former 56-48 and to the latter 56-48. There were some fine individual performances, however. Greg Wright, for example, took second place in the 100-yard freestyle, lowering the Caltech record to 51.98. Wright also bet the school 200-yard backstroke record with a time of 2:14.8. 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. Fresh Mahy Tyson and Mike Stelkfook 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.

Dive Steve Johnson and Al Jen Hirstein did exceptionally well by finishing first and second, respectively, to lead Redlands 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 Teachers. The final score of the seventeen-event meet was Redlands 113, Caltech 31. Thanks to tireless Redlands' Elliot Mason, the Beavers are to realize a measure 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.

Caltech Hosts SCIAC Relays This Weekend

Cinderman 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.

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Beagle Beaten

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 shutout by defeating his opponent in the singles division, 13-6, 6-4, in a grueling match. Second doubles was another extended match as Martin Frost and Jim Buckholts engaged Oxy's pair in a defensive duel, but finally lost 6-5, 6-1.

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

First man Pete Younz salvaged one set in his nee-saw battle with Barry Johnson before succumbing 6-1, 14-6, 1. Guy Duesediek likewise managed to capture one set, before losing 16, 64, 6-1.

Craig Tyner, suffering from a minor back injury, was defeated 6-1, 64. Donald Puchlack managed to win only one game while losing in straight sets. Kirk Benson did worse and was trounced.

Younz and Duesediek teamed to win one set in doubles before bowing 62, 34, 64. Tyner and Benson were swamped 61, 62, while a third powerful doubles team from Oxy annihilated Mike Sperry and Puchlack 61, 60.

CIT Netters Route

by Creasy

Veterans on parade

You know that the varsity basketball team of the California Institute of Technology played a game in which they were favored to win tomorrow as they put the last of their pride on the line against the Caltech Coffeeheads at Caltech's Scott Brown Gymnasium at 7:30 p.m. The game is part of a campus-wide effort to raise money to contribute towards 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 still be young enough to compete. The eager lawrences (third man 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 $2 admission fee.

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

Fleming 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 in: Fleming: 35, Page: 11; Blacker: 6, Lloyd: 4, Hicketts: 4; Ruddock: 2, Dahnay: 2. The Flem's next opponent are the mighty Hicketts, who have challenged in wrestling, softball, and -Are you ready?—horses.