

## Charities Drive To Open Monday

The annual ASCIT Charities Drive swings into action this Monday in search of donations for the American Cancer Society, the Multiple Sclerosis Asso-

ciation, and the World Universities Service.

Drive pledge cards will be passed out by UCC's in the Houses on Monday, and off-campus students will receive them by mail sometime during the week. Anybody donating to the drive will have the option of being billed through the Institute or giving his money directly to a UCC or Drive Chairman Paul Purdom, Ricketts, and Kurt Anderson, Blacker.

Donors will also be able either to pick one of the three charities to receive their money or else request that it be divided equally among the three participating organizations.

The drive will continue through next Friday, but Anderson and Purdom urge everyone to turn in pledge cards before then. There will be announcements in the Houses and signs posted on campus throughout the week. (ASCIT Drive signs, incidentally, should not be confused with signs for the Faculty Charities Drives, which concluded last week.)

Of the three participating charities, the World Universities Service is the only non-health organization. WUS spends most of its money abroad, giving scholarships, books, lodging, and medical care to students who could not afford such things without outside help.

The Cancer Society and the Multiple Sclerosis Association support research and pay medical expenses in the areas of the respective diseases.

## Big T Future Now In Doubt

BY BILL BAVER  
ASCIT President

During the past few years the editors of the Big T have found themselves faced with a steadily increasing problem: how to find enough staff members to put out a yearbook. This has resulted, as everyone knows, in the books' coming out further and further behind schedule; it has also resulted in a forced re-evaluation of the desirability of having an annual publication of this type at Caltech.

The question, of course, depends solely upon whether or not the student body as a whole wants to have a yearbook. For the last several weeks attempts have been made by the present editors to recruit enough staff members to publish a book on a magnitude resembling that of past issues; so far these attempts have proved completely unsuccessful.

During this and the following week those students who feel that there should be a yearbook, and who are willing to do some work on it, should contact either the editor, Peter Fischer (Ricketts); the assistant editor, Bob Schmulian (Ruddock), or any House president.

If a sufficient staff is not available  
(Continued on page 6)

## Interhouse Stars Alice, Troy, Oz, Okeefenokee



Interhouse Dance, the highlight of first term's social calendar, starts Saturday at 8 p.m. Combined with the dance is the Alumni Association's Homecoming plans.

Students have been working hard all week in the effort to complete the construction of the decorations. A majority of Tech's students will have had a hand in making the decorations successful.

The Olive Walk will be converted into the walled city of Troy. Ruddock, Ricketts and Page have combined to re-enact the invasion of Troy. Inside the walls of the city will be the festivities of the populace for their victory over the Greeks. Outside the walls Greek ships will be seen sailing away. Much of the effect will be created by the use of ultraviolet lights. There will be dancing in the Greek temple built between Ricketts and Fleming.

Blacker, whose theme is Pogo and the Swamp, will convert its courtyard into a cypress swamp, complete with alligators, swamp plants, and sound effects. There will be a tree house, and a rope bridge built across the swamp. Dancing will take place in Blacker's lounge, which will be converted into a bayou fishing shack.

Dabney will depict the Land of Oz. The lounge will be Emerald Castle, complete with a wizard's screen. Along the yellow brick road will be the scarecrow, tin man and lion, as well as some witches, several fields, and an enchanted forest.

Fleming will go Western, with the lounge transformed into a bar and casino. Real live dancing girls will entertain the customers, and a surprise guest will be the House madam. The courtyard will be a Western town, with various Western scenes, including a grave yard.

Lloyd will portray Alice in Wonderland. The courtyard will feature a forest, jabberwock, Cheshire cat, and tum tum tree. Inside will be several scenes, such as The Mad Tea Party, Mad Hatter, and the croquet game. A real live rabbit and Alice will be in charge of the domain, into which visitors can enter by going through the looking glass.

## Snow Will Discuss New Role Of Science

BY CRAG BOLON

Tuesday, November 22, at 8:15 p.m., Sir Charles Snow will deliver an address on "The Scientist in Government," at Dabney Lounge, as part of the Carnegie series. It should be one of the most interesting speeches in this program, because it touches on one of the basic tenets in the Caltech climate of opinion, the necessity of communication between the literary and scientific worlds.

Sir Charles Snow is uniquely

qualified to approach this subject since he is a member of both "worlds." A graduate of Cambridge, he is a top-flight scientist, who was put in charge of Britain's scientific research recruitment during World War II. He is even better known as an outstanding novelist, author of *The Masters*, *The Conscience of the Rich*, and others of a novel cycle ranked by critics with the works of Proust.

Snow's most noted statement of the consequences of this gulf between the scientists and the "intellectuals" is his book, *The Two Cultures and the Scientific Revolution*, published in 1959. His main theme is that this split between the scientific and literary cultures, now both groups of comparable intelligence and background, is continually increasing, and that, unless unrepaired, it could be fatal to the Western world. He asserts that both the cause of this breach and the instrument through which it must be repaired are our educational systems.

Snow approves of the enthusiasm, the social optimism, and the impatience of the scientists, but he regrets the impoverishment of their culture because of little contact with the arts. On the other hand, he says that the literary culture is even more impoverished, because, while it is possible for a scientist to approach the literary world, the "intellectual," lacking the rigorous training of science, is almost totally unable to comprehend the scientific.

Snow warns that the scientific revolution will affect our lives much more deeply, and certainly far more swiftly, than did the industrial revolution. Therefore, he says, we must immediately begin to prepare by spreading the teaching of science and expanding the scientific culture.

## Tech Dedicates, Rain Baptizes Alles

BY RICHARD KARP

Caltech's new Gordon A. Alles Laboratory of Molecular Biology was officially dedicated last Thursday, November 3, at 4 p.m., indoors at 119 Kerchoff. The

indoor dedication, a result of the rain, led President Lee A. DuBridge to remark upon opening that "We baptize things here, we don't inaugurate them."

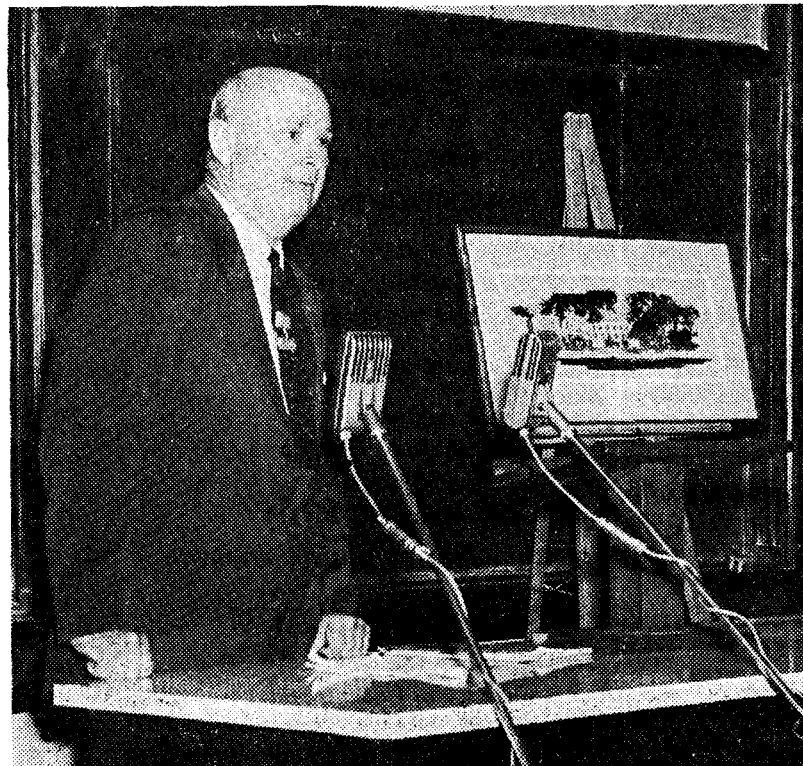
The program began, following

DuBridge's opening remarks, with the acceptance of the laboratory by Dr. George Beadle, professor of Biology and Dean of Faculty. Beadle described the history of the biology department, mentioning that the Alles Lab was the final link in the chemistry and biology departments. According to Beadle, there were several interesting accomplishments involved in the construction of the Alles Lab: first, there was a surplus on the building fund; secondly, the final constructor's bid was under the original estimate (underbid as a service to Caltech); and thirdly, the lab has perhaps the best biology stockroom on campus.

Following Dr. Beadle's remarks, Dr. Gordon A. Alles described his past at Tech.

After the completion of Dr. Alles' remarks, Dr. G. Halsey Hunt, chief of the division of Medical Sciences, National Institute of Health, discussed the government's part in the Alles Laboratories. The Department of Health, Education and Welfare, through the National In-

(Continued on page 9)



Dr. Gordon Alles speaks at dedication of Alles Laboratory.

## Frosh Drop Two Debates

Caltech freshman debate teams got off to a bad start this year by failing to place in either the practice tournaments held last week at El Camino College, or at the novice tournaments, held the week before at Long Beach State College. The freshman debate teams this year consist of Chuck Leonard and Richard Karp, John Maddy and Lynn TenEyck

Editorial

# Where Do We Start?

Many attempts have been made to pinpoint what it is that makes a great many students unhappy with life at Caltech. No clear conclusions have ever been reached. Blame has fallen on the faculty, the administration policies, the Student House system, the admissions committee, something inherent in the type of guy who desires to be a scientist, etc. Some have said that Caltech undergrads are apathetic about everything, some say they resist change, some accuse the student body and House officers of being phony glory seekers, some search vainly for a deeper underlying solution.

We would like to offer one additional suggestion to the discussion. We have no idea how unique it is to this campus, but we have noticed an astounding lack of sincere interest in the problems and feelings of any person outside oneself in all types of situations on all levels of campus activity, and a strong hesitancy to admit one's own weaknesses.

We know there are House presidents and House members who deny, without bothering to seek any information, that other Houses of a different character could possibly be understanding people better or creating a healthier atmosphere in which to live.

We know there are ASCIT officers who attack problems by continuing what was done last year before thinking of taking responsibility for what the students need and want this year.

We know there are YMCA officers who see their job as deciding what programs they themselves would like rather than finding out what the Y members or the student body as a whole would like.

We know there are students who are unhappy because their adviser shows little or no interest in their problems.

To us, most of these situations are typified on a personal level as in effect erecting a big stone wall in front of oneself. Not only do most of us refuse to be understanding with the points of view that seem to mean a lot to someone else, we also carefully guard our own beliefs and state them categorically as facts ("The guys in my House are more mature than the guys in your House."). We would like to point out that this sort of a close-minded attitude doesn't give the person you are trying to convince any insight at all into why you feel just as strongly as he does about a different set of values.

We do not believe that any of the things students seem to feel are "wrong" about Caltech are going to be corrected as long as we each sit behind our stone walls and wait for the rest of the community to understand our individual problems and offer a solution. There is too much of the attitude, say in House X, that one of the big problems is to overcome the situation in House Y, while the people in House Y are thinking the same thing about House X. On a different level, for every student that is wondering why his adviser doesn't care about him we are discovering there is quite possibly an adviser wondering why his students aren't interested in the faculty. For most every officer who is wondering why the members of his organization are so apathetic there are several members wondering why the officers don't lead them where they want to go.

Not much at all is going to be changed about this school until a significant number of students get up enough confidence to make the first move.

—jt

# Tech Reporters Cover Nixon With Color To Harvard Radio

BY TOM TISCH

WHRB, the student-run Harvard radio station, was well-represented on the West Coast last Tuesday evening, with the presence of Tom Tisch and Sid Leibovich covering election returns at Nixon headquarters in the Ambassador Hotel in Los Angeles. By previous arrangements, Tisch and Leibovich were to phone in hourly reports on the campaign situation, emphasizing local color (like you got on your TV screens), to WHRB in Cambridge, Mass.

This was part of plan to give nation-wide coverage to the Harvard area on a local basis. WHRB had correspondents in Washington, in Massachusetts at Kennedy headquarters, as well as in various local areas around Cambridge.

An example of a release which might have been sent out in the evening about 11 p.m. is the following:

"Surrounded by TV sets that blare with election returns and

squashed against a typewriter in the press room at the Ambassador Hotel, where the Nixon headquarters is for the evening, a definite trend for the Kennedy cause is developing. At this instant, NBC reports that Senator Kennedy is but 4 votes shy of winning the electoral college

vote, but a number of the states that they award to Kennedy are still marginal.

In the adjoining smoke-filled room, filled with staunch Republican supporters and TV cameras eagerly scanning the tally board for new information, Republican sentiment seems to be

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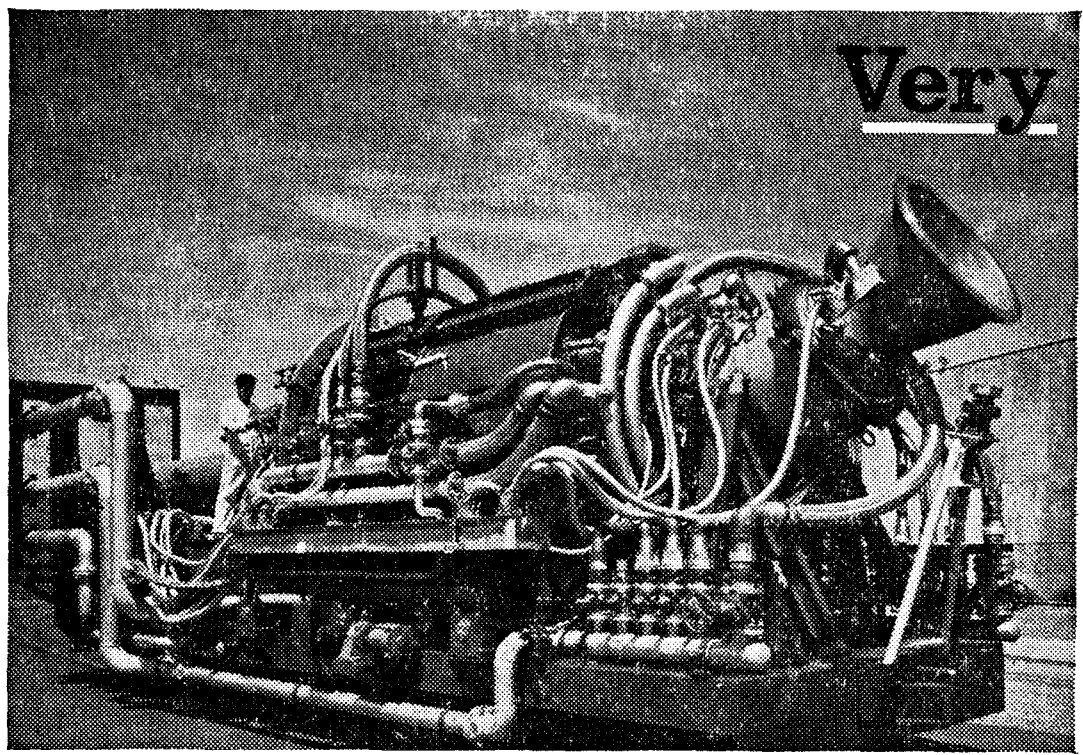


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high radiation flux level which itself leads to severe heat transfer and radiation damage problems. Because the operating temperature exceeds that at which most conventional structural materials fail, the core itself consists of bundled tubes of sintered uranium and beryllium oxide fabricated with central holes for continuous air passage.



# Radio Observatory Spots Over 50 New Stars

More than 50 radio stars—half of them a great distance beyond the Milky Way Galaxy in which the solar system resides—have been pinpointed by the new Caltech Radio Observatory.

Shielded from man-made radio noises by high mountains in remote Owens Valley 250 miles north of the Caltech campus here, the unique observatory has in its first 18 months precisely located more radio stars, as the signal sources are called, than all other radio observations combined. The Caltech facility was built and is operated on funds furnished by the Office of Naval Research.

Purpose of the observatory, according to its director John G. Bolton, is to find out what the radio stars are and what is the mechanism responsible for the strong radio emission.

Half the radio sources located by the Caltech observatory are very distant galaxies, which are great islands of stars in space. One of them is the most distant object known to man. It is either a single galaxy or two galaxies in collision at an estimated distance of six billion light years. A light year is nearly six trillion miles.

Some of these distant radio sources are double galaxies, but it is not clear yet whether both are concerned in the radio emission, Bolton said. Most of these star island radio sources are elliptical in shapes and only a

## Baker Quartet Next In Dabney

There are presently three concert series of any regularity occurring in the Pasadena area: The Soleman Concerts, in Pasadena Playhouse, on Sundays at 3:30; Los Angeles Philharmonic Symphony Orchestra concerts at the Pasadena Civic Auditorium Wednesday evenings at 8:20 (both of which cost money); and our own Dabney Lounge concerts at 8:15 Sundays, free.

The scheduled concerts yet to come during first term are: November 13, Dabney, the Baker String Quartet in a program of Viotti, Beethoven and Ravel Quartets; November 30, the first L.A. Philharmonic concert, featuring Gary Graffman, pianist, and conductor Georg Solti, with works by Rachmaninoff and Mahler, and December 4, another Dabney concert, Albertsheim and Kosches, duo-pianists, in an all-Schubert program.

For full and further information, especially concerning the off-campus concerts, see Mrs. Kotkin, Humanities Division Secretary.

few are spirals like our Milky Way Galaxy, he added. Most of the galaxies are extremely faint, which indicates they are very far away. In the case of the spiral galaxies, the radio source is much smaller than the visible counterpart. This means the radio sources in these galaxies are smaller than the entire galaxy. For most of the elliptical galaxies the radio source is larger than the star system.

The remainder of the newly positioned radio sources are comparatively nearby in our Milky Way Galaxy. They consist of emission nebulae (clouds of gas that have been ionized by nearby stars) and the fast-moving remnants of exploding stars (supernovae).

In announcing these findings, Bolton disclosed that a new facility has been added to the observatory that will make it even more effective in mapping the positions of radio stars in the

heavens. This is 1,600 feet of railroad tracks running north and south on the observatory site, and an extra 200 feet of tracks extending east and west.

The observatory's twin, 90-foot steerable dishes have been operating on a 1,600-foot length of east-west tracks. Mounted on railroad car wheels, the big steel mesh "ears" can be moved various distances apart to "listen" to a radio source simultaneously. This procedure, called interferometry, simulates the effect of a single reflector equal in diameter to the distance between the two dishes in a given direction.

"The one set of tracks limits the findings of the diameter in the east-west direction," Professor Bolton explained. "In order to get a complete picture of the 'radio brightness' of one of these objects, it also is necessary to make measurements in the other direction.

(Continued on page 6)

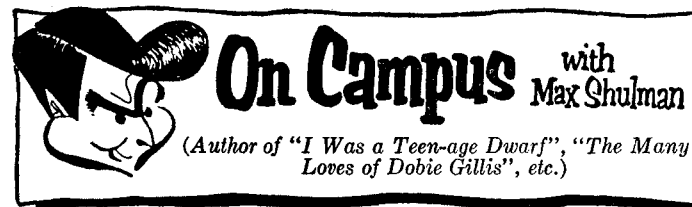
# Alles Dedication

(Continued from Page 1)

stitutes of Health was responsible for the payment of the other half of the Alles Lab. Dr. Hunt, as representative of the NIH, gave his greetings and also the greetings of the Surgeon General. Hunt stated that the new labs are an "... example of co-operation between the public and private interests with regard to research."

The dedication ceremony then adjourned to the corridor of the

Alles Laboratory for tea. During the tea, there was a general open house and inspection of the new lab. Demonstrations, one to each floor, included: transferring protein types in mice, description of the DNA molecule, mutant varieties of the fungus *Neospora* and the common fruit fly, fungus inhibitors in oats, genetic development of frogs, and separation of the cerebellum in higher animals for teaching each side of the animal individually.

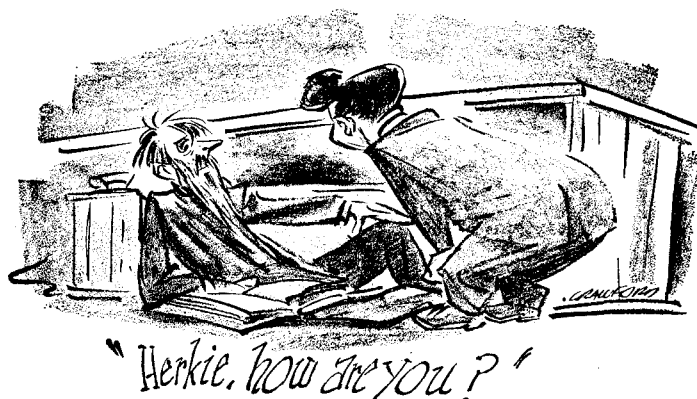


## HOW TO BEAT THE BEAT GENERATION

My cousin Herkie Nylet is a sturdy lad of nineteen summers who has, we all believed until recently, a lively intelligence and an assured future. Herkie's father, Walter O. Nylet, is as everyone knows, president of the First National Artificial Cherry Company, world's largest maker of artificial cherries for ladies' hats. Uncle Walter had great plans for Herkie. Last year he sent Herkie to the Maryland College of Humanities, Sciences, and Artificial Cherries, and he intended, upon Herkie's graduation, to find him a nice fat wife and take him into the firm as a full partner.

Could a young man have more pleasing prospects? Of course not. But a couple of months ago, to everyone's consternation, Herkie announced that he was not going into the artificial cherry business. Nor was he going to stay in college. "I am," said Herkie, "a member of the Beat Generation. I am going to San Francisco and grow a beard."

Well sir, you can imagine the commotion in the family when Herkie went traipsing off to San Francisco! Uncle Walter would have gone after him and dragged him home, but unfortunately he was right in the middle of the artificial cherry season. Aunt Thelma couldn't go either because of her old leg trouble. (One of her legs is older than the other.)



So I went. I searched San Francisco for weeks before I found Herkie living under the counter of a Pronto Pup stand. "Herkie, how are you?" I cried, looking distraughtly upon his tangled beard, his corduroy jacket, his stricken eyes.

"Beat," said Herkie.

I offered him a Marlboro and felt instantly better when he took it because when one smokes Marlboros, one cannot be too far removed from the world. One still has, so to speak, a hold on the finer things of life—like good tobacco, like easy-drawing filtration, like settling back and getting comfortable and enjoying a full-flavored smoke. One is, despite all appearances, basically happiness-oriented, fulfillment-directed, pleasure-prone.

"Herkie, what are you doing with yourself?" I asked.

"I am finding myself," he replied. "I am writing a novel in the sand with a pointed stick. I am composing a fugue for clavier and police whistle. I am sculpting in experimental materials—like English muffins."

"And what do you do for fun?" I asked.

"Come," he said and took me to a dank little night club where men in beards and women in basic burlap sat on orange crates and drank espresso. On a tiny stage stood a poet reciting a free-form work of his own composition entitled *Excrema: The Story of a Boy* while behind him a jazz trio played 200 choruses of *Tin Roof Blues*.

"Herkie," said I, "come home with me to the artificial cherries."

"No," said Herkie, so sadly I went home to tell Uncle Walter the bad news. He was less distressed than I had feared. It seems Uncle Walter has another son, a quiet boy named Edvorts, about whom he had completely forgotten, and today Edvorts is in business with Uncle Walter and Herkie is beat in San Francisco, and everyone is happy.

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## La Verne Trips Tech In Muddy Grid Battle

BY PETE METCALF

John Arndt caught 13 passes last Saturday but it wasn't enough to win, for La Verne College went on to defeat the Beavers, 22-6, in a non-league game held at the victors' field. This ties the NAIA national record for the most passes caught in single game of 13, and the record was set by Ken Gregory of Whittier against Caltech in the game prior to the La Verne game.

The game, which was played in torrential rain for a large part of the second quarter, was remarkably close. Caltech amassed 229 yards total offense, while LVC gained 278.

La Verne capitalized on a Caltech fumble on the 40-yard

line to go ahead 8-0 in the first quarter. They marched 50 yards to increase their lead to 14-0 early in the second period, but Caltech scored as the result of a 90-yard march to make the score 14-6. The conversion attempt failed.

Frank Marshall was trapped behind the goal line for another La Verne score early in the second half. The score then stood 16-8, but a La Verne halfback broke away for a 31-yard run to make the score 22-6. The Beavers marched 61 yards to a first down on the La Verne 7-yard line early in the fourth quarter, but were unable to score. With seconds left to play, Caltech again got into scoring position, this time with a first down on the La Verne 13-yard line, but an intercepted pass ended the threat.

Next week Caltech plays Occidental at the Rose Bowl for the annual Alumni Day. The Tigers are heavily favored after their 7-0 victory over Redlands last week.

## Kickers Blast By Biola On 5-2 Margin

BY FRANCIS WILSON

Last Saturday the Caltech soccer team, which does not like smog, decided that it does like mud as it defeated Biola College, 5-2. The game was marked by heavy rain during the first 20 minutes and by rough playing throughout. Although the visitors led at halftime 2-1, the Tech team had not been really outplayed; during the second half, the attack began shooting the ball a little lower and scored four times, while the defense settled down to hold demoralized Biola scoreless. Jerry Davis scored one goal, and Joel Kwok and George Argyropoulos each scored two.

It is encouraging to note that the soccer team has scored more times in the last two games than in the previous four games. It is hoped that the attack will retain and develop this ability to score, which has been slightly lacking in previous years. Next Saturday morning the soccer team plays dangerous Riverside at Tournament Park. UCR won the first game, 5-1, and must be considered favorites. All students are invited to root the Techmen on to a possible upset.

## Sabersky Gets \$28,000 For Liquid Study

The behavior of liquids under certain conditions of heat and pressure that can occur in rocket motors, nuclear reactors and modern steam plants will be studied at Caltech under a \$28,000 grant from the National Science Foundation.

Dr. R. H. Sabersky, associate professor of mechanical engineering, will be in charge of the project, assisted by Karl Knapp, a graduate student in mechanical engineering and an Atomic Energy Commission fellow.

At a certain combination of heat and high pressure, known as the critical point, only small changes in temperature are required to produce large changes in the behavior of a liquid. The purpose of the NSF grant is to study what happens when heat is applied at or near the critical point.

"A full understanding of the problem will aid engineers in the design of future power and propulsion equipment," according to Sabersky.

## Big Mudeo Pit Prepared For Annual Games

The Annual Freshman-Sophomore Mudeo will be held next Tuesday in the MudPit, currently being worked into the proper consistency out behind the Gym. In the last three years, the Sophomores have won twice, and the Seniors have won once. Last year's senior class gained their victory by entirely disrupting the proceedings and claiming themselves the victors. But said Senior Class Prexy, Jim Sorenson from the mud pit shortly thereafter, "Grrraghh!"

As per usual, the Juniors will be the arbitrary judges and the rope tug, horse and rider, and other events will provide fun for all.

## Ruddock Captures Discobolus Trophy

Ruddock topped Fleming two games to one in a bowling match Sunday night to bring the Discobolus challenge trophy to Ruddock for the first time. Dave Hammer was high man with a 555 series for the victors.

## Tech Harriers Dump Pomona

Both the frosh and varsity old Nathan, Bob Sorensen, and Jacques Calma took third through sixth, respectively. They were followed soon by Dennis Holt in eighth and Jim Hole (most improved frosh runner) in ninth.

The varsity took first, second, third, sixth, seventh and ninth, with only 31 seconds separating the first three men. Pat Earley ran a good 17:54 on the hilly, muddy Mount San Antonio "three-mile-plus" course for first place, a full 1:03 ahead of Pomona's first man, Marshall Johnson took coach Walter Mack's instructions of last week ("Close ranks from third place on down . . .") seriously as he chopped his time behind Early to 26 seconds to move into second spot on the team and in the meet.

Frosh Ed Lee made his move a little too soon and had to settle for second place in 12:45 over the two-mile course, but from thereon it was a Caltech race. Within 54 seconds the top five Tech frosh had crossed the finish line as Larry Weaver, Har-

old Nathan, Bob Sorensen, and Jacques Calma took third through sixth, respectively. They were followed soon by Dennis Holt in eighth and Jim Hole (most improved frosh runner) in ninth.

Rounding out the top five for the varsity were Richard Harris, third; Al Whittlesey, sixth; and Norm Reitz, seventh. Art McGarr and Bill Giauque performed that all-important displacement function in the ninth and eleventh spots, and Jim Williams rounded out a fine team effort in thirteenth spot, well ahead of the Pomona sixth and seventh men.

Tomorrow our budding young masochists take on Claremont in what should be a very tight-away meet. Ed Laughton, Claremont's first man, fought Dick Tuft to the wire in last year's meet, with Tuft winning by only one second. His time this year against Pomona over the Mt. Sac course was only 10 seconds slower than Earley's. This should be a crucial meet indeed.

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- Naval Tactical Display Systems
- 3-Dimensional Radar
- Air-to-Air Missiles
- Space Propulsion Systems
- Tunnel Diodes
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**CAMPUS INTERVIEWS**

**November 14 and 15**

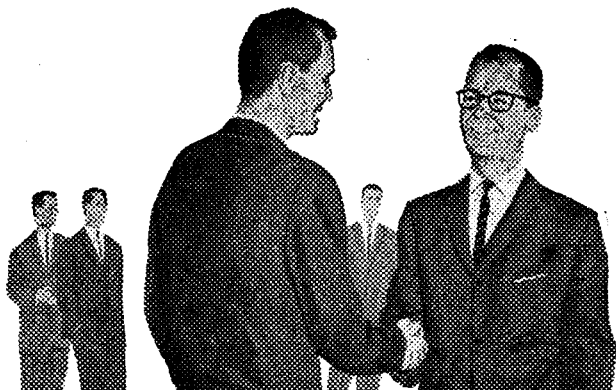
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# Beavers Emerymen Edge CMC; Introduce Nixon To Harvard Face Pomona Here Tomorrow

Russ Russell, junior letterman on the varsity water polo team, sparked the Emery-coached Techmen to a 6-5 victory over Claremont-Harvey Mudd, in a closely fought game last Tuesday in Alumni Pool. Russell picked up two goals — his first two in collegiate competition — by breaking free of his guard, and streaking down court to score.

Fred Hameetman and Bruce Chesebro accounted for the remainder of the Caltech goals.

The first quarter saw the Techmen jump off to 2-0 lead and seemingly assumed command of the game. However, the Claremont Stags bounced back in the second quarter to keep the margin the same, so that the half-time score was Caltech 4, CMC 2.

The second half of the game was dominated by Claremont, as they outscored the host team, 3-2. Fortunately, the Beavers were able to stave off the CMC attack, and as a result retain first place in the league (due also of the defeat of Pomona by Oxy).

Last Friday, the Techmen were upset by Occidental in the Tiger's own pool by a 10-6 score. Occidental, playing an excellently coached game, jumped off to a 3-0 lead, and managed to cling to it throughout the game.

Tomorrow the Beavers tackle Pomona at the Alumni Pool, 4 p.m., in what could very well be the game that will decide the Conference championship!

(Continued from Page 2)

waning from the strength that existed earlier in the evening.

Hoarse cheers of "We Want Nixon" echoed throughout the tally room earlier in the evening, but these—like the groans of protest over bad news—have diminished in volume and frequency."

Correspondents from Time, Life, New York Times, London Daily Telegraph, and so forth,

were among the scurrying newsmen there. It was difficult to pin anyone down on his views, but at the same time there was no problem getting people to discuss the situation.

Toward the middle of the evening, the Kennedy trend was running strong, and things had quieted to the point of waiting for the Vice-President to make his appearance. He did so about midnight.

The phone calls to WHRB ended with one that introduced, via local color, the entrance of Nixon to the press room on the way to make his qualified concession speech. Perhaps if you were listening to WHRB, you would have discovered that the garbled voices of Tisch and Leibovich were as tense and excited as those of the people elsewhere.

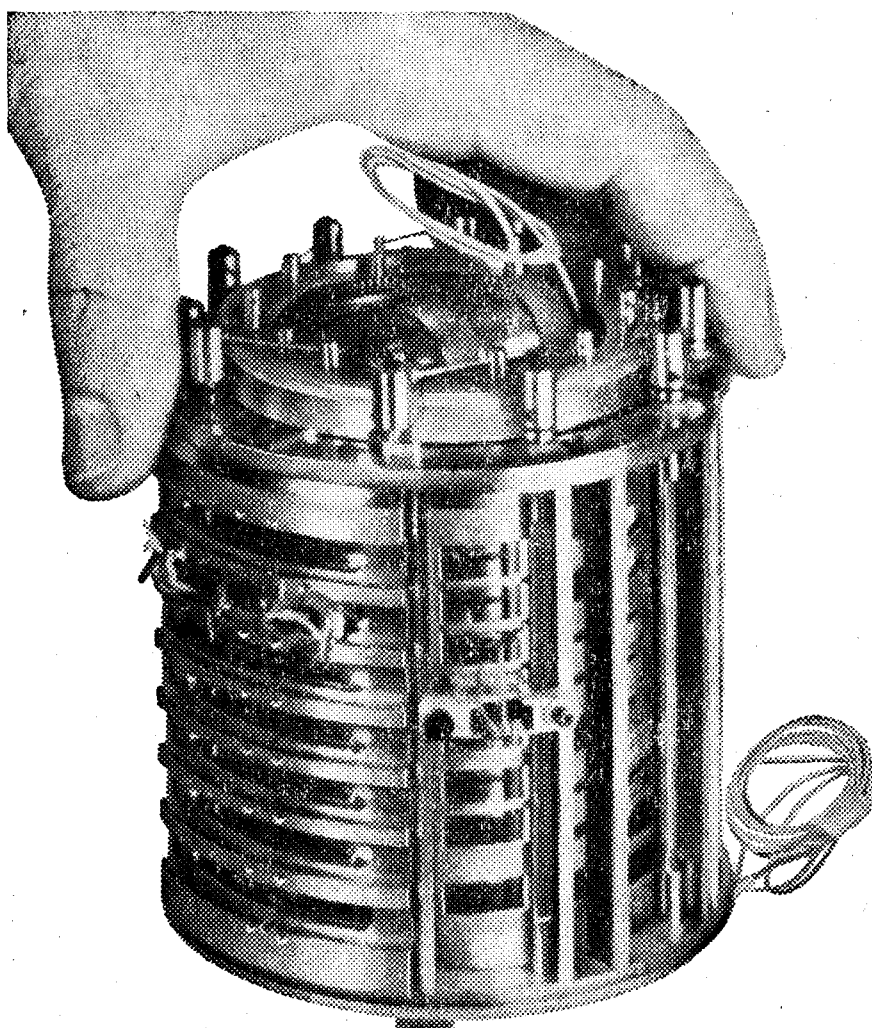
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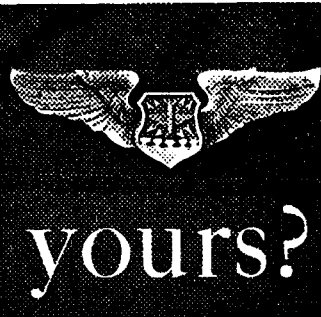
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The very small size and weight of this memory unit is an achievement in itself. Yet other difficult problems had to be overcome—shock, prolonged vibration and extremely high G forces. Only by using new materials and design techniques were these problems solved.

People with backgrounds in the sciences, engineering, and liberal arts all contributed to the success of this project. Ideas which create new products can come from anywhere at IBM. From research, development, programming, manufacturing, marketing.

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# Student Discussions Set With MacLeish

Caltech students will have an opportunity to meet and talk with one of the great intellectual figures of our time later this month when Archibald MacLeish visits the campus.

A chance for especially close contact and meaningful discussion is available in the form of a reading-discussion group. If enough interest is shown this group of both undergrads and graduates will be organized to read some of MacLeish's work beforehand and then use this reading as a basis for discussion with him. These discussions

would be in addition to MacLeish's schedule of open-to-the-campus meetings and discussions. Further information is available in the YMCA office.

MacLeish's visit, November 30 to December 2, is part of the Caltech Y's "Leaders of America" program. A Y committee is now in the process of setting up the schedule. Included during the three days will be poetry readings, informal discussions, short lectures, meetings with English classes and possibly a symposium involving MacLeish and several members of the Tech faculty.

MacLeish will live in the Student Houses during his visit and will be the guest of various Houses for lunch and dinner.

# Astronomy

(Continued from page 3)

"At present, one coordinate of the positions can be determined from the east-west tracks in a matter of minutes. The other coordinate requires some eight hours to determine with somewhat less accuracy. The north-south tracks will permit us to do this very much more accurately and in a much shorter time."

The Caltech observatory shared in the discovery of the unexpectedly high radiation from the planet Jupiter. Last year the observatory showed that this radiation was partially polarized, came from a belt 200,000 miles above the planet's surface and was similar to the earth's Van Allen Belt but with an electron density and radio emission on a vastly greater scale.

As for the pinpointing of the most distant object — in which the Caltech radio observatory participated — it is an example of international and inter-discipline cooperation in science.

"Identification of the subject, known as 3C295, was the combined work of a number of radio observatories and the 200-inch Palomar optical telescope," Bolton said.

"The clue to its vast distance was provided by the University of Manchester in England, where it was shown that the angular size was extremely small and, therefore, it was likely that the distance was extremely great.

"Both the University of Cambridge (in England) and the Caltech radio observatories obtained the same highly accurate position for this object. The optical counterpart was noticed first at Caltech on photographic plates from the 48-inch Schmidt telescope camera," Bolton continued.

"The most distant galaxy is a very peculiar one which itself is a member of a large cluster of galaxies. The peculiarity of extremely strong emission lines in the spectrum enabled the determination of a very precise red shift which can be translated into distance," the radio astronomer said. "This distance also has been confirmed by photoelectric measurements of several other galaxies in the cluster."

## Announcements

### MECHANICS MEET

The A.S.M.E. student section will have a meeting next Thursday, November 17, at 11:00 a.m. in 206 Eng. Captain M. H. Jordan of the Engineering Corps of the Navy will speak on "Non-military Engineering in the Navy."

### ALSO ENGINEERS

The Chemical Engineering Club will hold its first dinner meeting of the year at 6:15 in the Athenaeum Monday night, November 14. The guest speaker will be Dr. John Mason of the AiResearch Corporation. He will talk on the engineering curriculum and preparation for a professional career, as well as answering questions about employment.

# Big 'T' Needs Help

(Continued from Page 1)

able at the end of this time, the yearbook next year will consist of the following three parts only: (1) a section devoted to senior pictures; (2) a section consisting of House pictures, taken by classes within the Houses; and (3) advertisements.

If a large enough staff can be

found, the yearbook may consist of a somewhat shorter version of past layouts. You are urged to make your opinion heard upon this matter, especially as to whether or not we should have a yearbook at all. If interested in working, please contact one of the above-mentioned people immediately.

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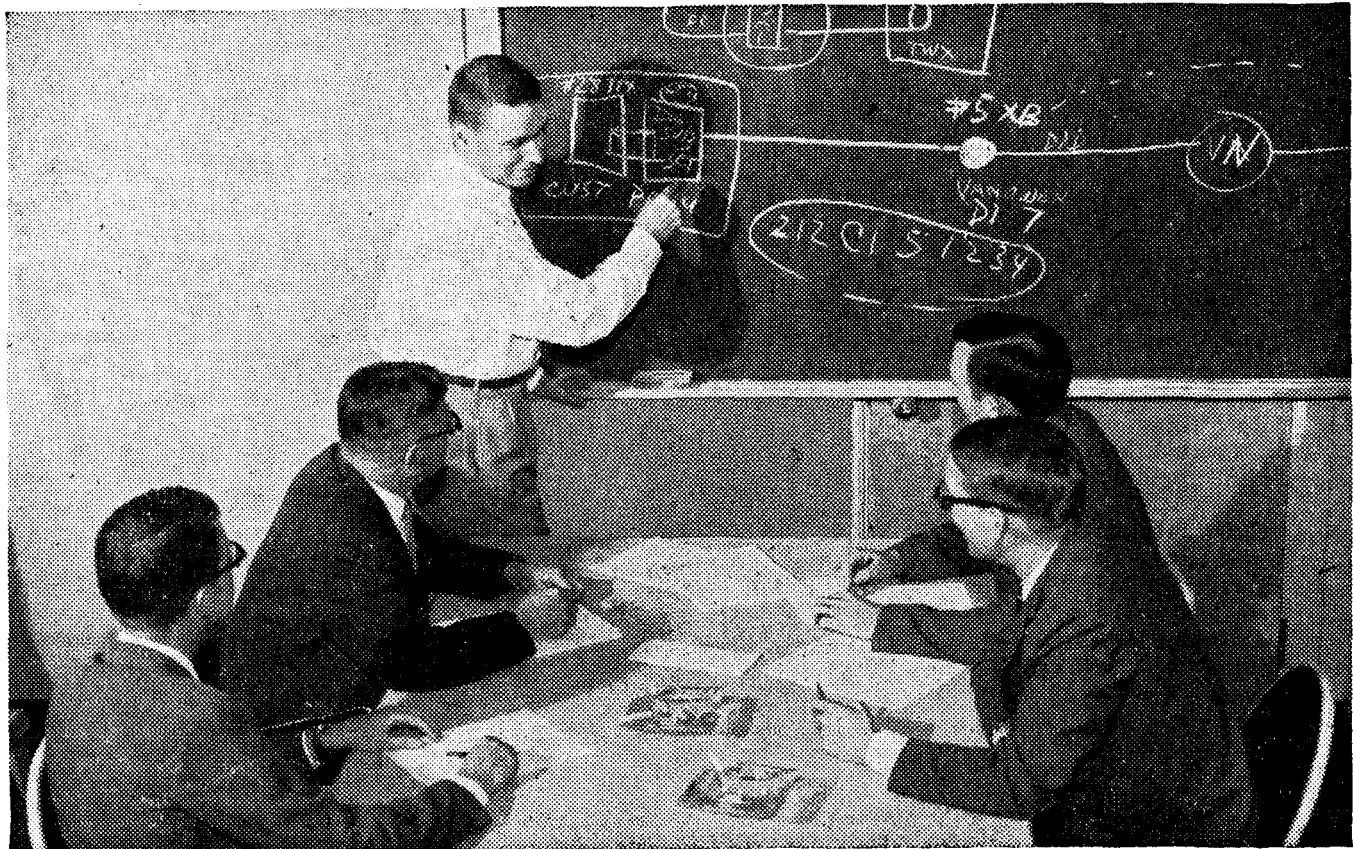
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## STU'S EXPLAINING HOW MACHINES WILL SOME DAY "OUTTALK" PEOPLE

"Stu" Smith graduated from Southern Cal with a powerful yen for excitement. His kind of excitement—Engineering.

He got what he bargained for (and a little more) when he joined Pacific Telephone. One of Stu's early assignments was to find out how existing Long Distance networks could be used to pipeline high speed "conversations" between computers in distant cities.

The fact that he did a fine job did not go unnoticed.

Today, four years after starting his telephone career, Senior Engineer Stuart Smith heads a staff of people responsible for telegraph and data transmission engineering in the huge

Los Angeles area. As a pioneer in this new data transmission field Stu predicts data processing machines will some day do more Long Distance "talking" than people.

Stu contacted 12 other companies before joining Pacific Telephone. "I don't think there's any limit to where a man can go in the telephone business today. Of course, this isn't the place for a guy looking for a soft touch. A man gets all the opportunity he can handle right from the start. He's limited only by how well and how fast he can cut it."

*If Stu's talking about the kind of opportunity you're looking for, just visit your Placement Office for literature and additional information.*



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