

Tech debaters win at Tucson

Debaters take two first places in outstanding WSA victory

The Caltech teams tied for first place in lower division men's debate at the annual Western Speech Association contest at Tucson, Arizona, the most keenly competitive tournament of the year. Mixing with representatives from ten western states, the two Caltech teams, under the direction of Dr. Lester L. McCrery, were the sole survivors of seven consecutive rounds of debate.

The sophomore team, Rube Moulton and Mike Bleicher, was

undefeated throughout the entire tournament. Last season, as freshmen, they won top honors for Caltech at the annual Pi Kappa Delta regional debate tournament, and also took third place in lower division men at the Western Invitational tourney last year. So far this season, this team is undefeated in intercollegiate debate, having a record of 11 straight wins.

The freshman team of Gene Cordes and Andy Perga tied with Moulton and Bleicher. This

new team has compiled a string of thirteen victories with only two defeats, having won an undefeated medal at the L.A.C.C. debate tournament. By winning all but one of their debates at Tucson, Cordes and Perga were awarded a first-place tie in lower division men, the only time this has happened in recent Caltech history.

After the semi-finals, a quiet announcement appeared on the bulletin board, stating that there would be no finals in lower divi-

sion men's debate. Since Caltech had placed two teams out of the four allowed in the semi-final round, the notice simply meant that Tech had defeated the other two teams, Stanford and USC, thus hold both first and second place. As is a policy when such a predicament arises the contest was declared a two-way tie between the two teams for first place.

Bill Lindley, a senior and four-year forensics man at Tech, took

a certificate of excellence in upper men's discussion at the Tucson tourney and was ranked fourth place among all the representatives from the western schools. Myron Black was Bill's partner in upper division debate, which includes juniors and seniors.

Herb Rauch and Don Meyer, who both won awards at the San Diego State tourney last month, won fifty percent of their debates, were eliminated from the final rounds.

The Caltech debate squad will next be represented at the consolation tournament at Occidental College on December 10-11. This tourney is for debaters who were unable to attend the Tucson tournament.

The debate topic this year is "Resolved: that the United States should extend diplomatic recognition to the Communist government of China."

CALIFORNIA TECH

Volume LVI

Pasadena, California, Thursday, December 2, 1954

Number 9

Students converge on Tech

Fifth annual Students' Day features guided tours, demonstration lectures

Caltech goes on parade this Saturday, December 4, when over 900 seniors from approximately 120 high schools will visit the Caltech campus for this year's version of Students' Day. The day is designed to give the visiting students a look at science and engineering as taught and developed here on the campus. Events have been scheduled that will show some of the latest of the fascinating and interesting discoveries in these fields.

Athletes get fall awards next Monday

Caltech's fall sports lettermen will receive awards at the Sports Banquet this Monday. Sweaters and jackets will be awarded to varsity letter winners in football, soccer, water polo, and cross country, as well as numerals to deserving frosh. The banquet will be held at Brookside Park at 6:30. The steak dinner will cost team members \$1.25; others will be charged \$2.50.

Phil Conley, athletic manager, has announced that he has secured Rev. Bob Richards, world famous pole vaulter, to be guest speaker. His topic will be "Heart of an Athlete" and will include intimate glimpses of such athletes as Bob Mathias and Bob McMillan. Bob Huttenback will be the toastmaster.

New committee for game room

A twenty-five cent game room charge has been approved by the student houses and Throop Club. The sum will go for repairs and new equipment.

"No eating or drinking" signs have been posted in the game room. The hours between 11:00 p.m. and 6:00 a.m. are to be observed as "quiet hour," after which the room will be closed one hour for clean-up.

Chairman of the ASCIT-sponsored group is second rep Bill McDonald, and committee members appointed by the house presidents are Chuck Stone, Blacker; Hal Dale, Dabney; Larry Whitlow, Fleming; Dick Van de Houten, Ricketts; and Hugh Dubb, Throop.

Each house president has invited a number of the high schools to be the guest of his house for the day. It is at this house that the students and their teachers will register for the day's activities. Registration will begin at 8:30 a.m. and last until the beginning of the morning tours at 9:00.

The students will then tour the campus, look at the buildings, the equipment and a number of the 47 exhibits and demonstrations that are planned for the morning program. For those seniors who decide to attend college here, this will be the first of a long acquaintance with CIT lectures, demonstrations, and talks.

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Dr. Zechmeister goes to Mexico

Dr. L. Zechmeister, professor of organic chemistry at Caltech, left Pasadena November 22 to serve as visiting professor at the National University of Mexico in Mexico City.

During his month-long stay at the University's new Institute of Chemistry, he will deliver a series of nine seminars. In these he will report on his research at Caltech on the stereochemistry and spectral properties of polyenes and will also discuss some general biochemical problems related to organic chemical structures.

Professor Zechmeister, who received his undergraduate and graduate training at Zurich, Switzerland, joined the Caltech faculty in 1940. He is widely known for his research in many areas of organic chemistry and for editing, since 1938, the international series, "Progress in the Chemistry of Organic Natural Products."

Field Marshal Montgomery stresses role of science in today's conflict

By Tom Bergeman

"The key to the future is in the hands of the scientists," Field Marshal the Viscount Montgomery told a responsive Caltech audience Monday in an address at Tournament Park.

Montgomery, punctuating his speech with delightful bits of English wit, emphasized that the conflict today is a global problem, and should be dealt with on a global scale by a united free-world front.

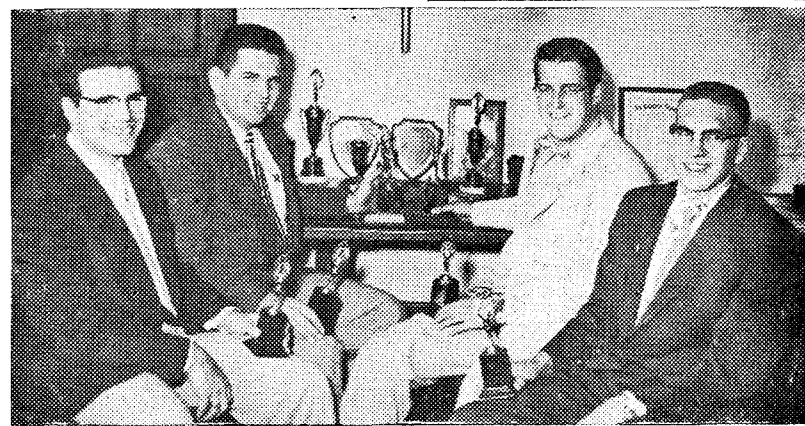
The Field Marshal was on campus three days at the invitation of President DuBridge, who worked with Montgomery at a NATO conference in Paris last April. Impressed with the importance of science in today's military world, Field Marshal Montgomery visited Tech because, as he said in an earlier press conference, "We fighting men have to work closely with scientists."

Caltech scientists returned this respect upon meeting the Field

Marshal. A crowd of five to six hundred in the baseball stands at Tournament Park saw this great man as a slight, friendly



Field Marshal Montgomery addresses Caltech at Tournament Park. (Photo by Stu Bowen.)



Caltech debaters (left to right) Mike Bleicher, Rube Moulton, Andy Perga, and Gene Cordes hold first place trophies won at last week's Western Speech Association tournament, with other debate trophies on display. (Photo by Stu Bowen.)

Marshall Cram to play at ASCIT dance Saturday

Saturday, December 4, the ASCIT will hold its big fall dance, the "Santa Sock Hop," in Dabney Hall from 9:00 p.m. until 12:30 a.m. Marshall Cram's orchestra will play for the event and Lucy Ann Polk, recording star and vocalist with Les Brown's orchestra will add beauty to the vocalizing.

According to first rep Bob Kausen, the dress will be skirts and sweaters for the women and

slacks and sweaters for the men. Couples will doff their shoes and dance in stocking-feet, with prizes given for the wierdest socks.

Techmen and their dates are asked to bring toys for the price of admission. After the dance, the toys will be donated as Christmas presents to the Hathaway Home for Children, the Children's Training Society, and The Episcopal Home for Children. Any money budgeted for the dance which is not spent will also go for more toys.

The decorations, featuring a negative Christmas tree, will be prepared by Chuck Bodeen, with the help of the Instituturs.

Faculty dinner fetes Pauling

Dr. Linus Pauling, chairman of the Division of Chemistry and Chemical Engineering at Caltech and winner of the 1954 Noble Prize in chemistry, will be the guest of honor at a dinner being held Friday, December 3, at the Athenaeum.

The dinner, which begins at 7:30 p.m., will be attended by more than 300 Caltech faculty members, trustees, and associates. It is being given as a send-off to Pauling, who leaves early Monday morning on a three month round-the-world trip.

The first stop on his trip will be Stockholm, Sweden, where he will receive the Nobel Prize next Friday, December 10. From

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California Tech

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Entered as second-class matter Nov. 22, 1947, at the Post Office in Pasadena, California, under the Act of March 3, 1879.

Freedom on trial . . .

Every summer someone goes into a smoke-filled room somewhere and comes out with the national collegiate debate topic for the following school year. This year's question, as formally stated, is: "Resolved: that the United States should extend diplomatic recognition to the Communist government of China."

All over America, college debaters began work on this question at the beginning of the school year. Most of them had to prepare briefs on both sides of the issue, since college tournaments are usually so arranged that each individual must debate each side at least once in the course of the tournament.

The calm progress of college forensics came to a screeching halt last month, when debaters learned of the following developments:

At West Point and Annapolis, debaters were forbidden to debate the question; military men should not speak on foreign policy.

In the Midwest, a youth wrote his Congressman for source material. He got no material at all—except for a sizzling letter which expressed the hope that no red-blooded American boy would think of debating the affirmative side of the question.

Another congressman in the East wrote home for a list for the FBI files of those who had been debating affirmative, and of those authorities whose quotations were being used to support the affirmative.

No time for complacency

In general, the debate program has proceeded undisturbed. It is our hope that the American public is very disturbed.

The point of view represented by the West Point administration and by the two congressmen is intolerable. It is ignorant, prejudiced, and undemocratic. It is completely contrary to the philosophy behind the Bill of Rights, which is an appendix to our Constitution which some ancestors of ours felt was essential to safeguard personal liberties.

It is ignorant and prejudiced because it overlooks the fact that the great majority of affirmative arguments are based on a cold hard-headed practical evaluation of the American position in the cold war.

The point of view is undemocratic in a painfully obvious way. It proposes to prohibit any kind of controversial question. It aspires to prevent American citizens from advocating any other foreign policy than the present administration doctrines.

Certainly there are limits which must be placed on the right to say what you please. But by no stretch of the imagination can advocacy of recognition of Red China be interpreted as falling outside any fair limits. As debaters view the issue, there is no clear and present danger to the government of the United States which emanates from a free discussion of the question. The proponents of recognition do not intend to weaken the U.S., but to strengthen it. The fact that only a minority seem to agree cannot be used as grounds for stifling free discussion of the question.

Let the people speak

If the gentlemen behind the decisions at West Point and Annapolis and the two congressmen could have their way, Winston Churchill and the entire Ministry of Foreign Affairs in Great Britain would be listed as enemies of the American people—for Britain is one of a dozen non-Communist countries which has recognized Red China. If these gentlemen had their way, every college graduate who ever debated the "wrong" side of a controversial topic would have his security clearance denied.

We are afraid of people like the two congressmen. We would like to retain the privilege of writing strongly-worded editorials on controversial subjects.

Maybe every name on our editorial staff will be marked down somewhere in some vigilante's files. Gentlemen, we do not advocate violent overthrow of the Republican administration, much less of the American government. We do not even advocate turning over all our military and technological secrets to the Russians.

We know that our forefathers intended to preserve for us the right to speak our minds on controversial issues, as long as law and order are secure.

We side with them.

To our visitors

Frankly, high school students, Caltech is showing off to you, and we hope you like it.

We hope you're impressed when men like Dr. Beadle, next president of the American Association for the Advancement of Science, chats with you on biology, when Dr. Feynman, prize-winning theoretical physicist, entertains with stories about molecules, or when numerous other lecturers display the wonders of science. We've lined up our top talent, and dusted off the scientific showpieces with the most chromium, flashing lights and gadgetry.

Enjoy the show, and soak up all the glamor of these great men, but as you do so, realize that love for science and respect for Caltech lies deeper than a fascination for moving gears. We hope those who come here considering a career in science will gaze through the stage lights and make-up to see the real challenge of science or engineering at Caltech. Sure, Tech is filled with pretty spectacular research, but the undergraduate is more concerned with absorbing the fundamentals of his profession, as well as with the process of maturing through all-important college years into a respected member of society. To us here at Tech, the experience is a mighty challenge and an exciting experience.

Although Students' Day at Tech can't reveal all this to a visiting high school senior, it's our friendly way of inviting the qualified student to consider our school for the next step in education.

LITTLE MAN ON CAMPUS

by Dick Bibler



"We'd like to take you upstairs and show you the real graciousness of Caltech life, but it's sort of a rule around here to wait 'till you're admitted."

Athanaeum parking

"When it rains, it pours." At least so it seems concerning the parking situation at Tech. Our campus has been swamped with cars for some time, but this seems to be the year of the deluge.

Last year, before the construction of the new Church biochemistry laboratory, most of the faculty members, Institute employees, Athanaeum members, graduate students, seniors and juniors who wanted assigned parking spaces, had them. But when the beginning of construction wiped out a whole parking lot, some people found they had to walk farther each day than they had had to before, and juniors this year have found that there are not enough assigned places left for them.

Some of those who had no places assigned and who wanted to park closer to the houses than Tournament Park began to park in the Athanaeum lot. Irate Athanaeum members who then found that they had no place to park in their own lot started a wave of protest that culminated in the announcement in the houses on November 10 that the Athanaeum parking rules henceforth would be rigidly enforced and students parking there could expect to receive tickets.

Although long-term parking in the Athanaeum lot has always been taboo, the fact that in the past students' cars parked there for only an hour or so have been overlooked has led many to believe this their privilege. However, the central lot is set aside for Athanaeum members and their guests for parking not to exceed three hours, and the lot at the corner of Hill and California is for permanently assigned parking for Athanaeum residents. (The reserved spaces near Blacker are for seniors). Since the Athanaeum is a semi-private organization and the lots are theirs, they have every right to enforce this rule to the letter, regardless of the hardships it may work on

Campus Brewins

"A Woman is a dish for the gods. . ."

The reporting of the comings and goings of Techmen, as recorded by the everfaithful Beak in his wanderings about campus with a notebook and an eavesdropping ear, has become a tradition in this newspaper which from time to time needs to be justified. As one dear departed editor once put it, "We print the only college newspaper with a high school gossip column." To compare this column with a high school gossip column is certainly an insult to high school gossip columns. But really, "Campus Brewins" simply tries to tell what has been brewed on campus recently, and serves as a general recorder of hard luck stories, tales of cruel hearted women, and miscellaneous observations.

Mammoth story

A few of the Rowdies enjoyed Thanksgiving at Mammoth. Quoting Bob Gelber: The women were terrible. Dick Jali pulled the big booboo of the trip as his "Mammoth jinx" worked for the second year in a row. At the beginning of the trip Rats A. Johnson told the troops not to forget anything. Jali laughed aloud at the childish advice, but upon unpacking at the trip's end he discovered . . . Beak's note: Don't go to Mammoth unless you bring your skis.

The frosh Phoenix group at the northeast house had been getting along grandly during the first term. Ironically, however, along with Thanksgiving came a couple of "Dear John" letters from the Phoenix contingent of faithful women. Curiously enough, Van Kirk and Mitchell now have "I hate women" signs on their doors.

A surprise incidental item: C. T. Elliott did homework over Thanksgiving.

Bogdonavic is at last beginning to feel that older girls are the best dates. Last year Luke was the main exponent of taking 14-year-old women out, but we guess being a football player has changed his outlook. At Mammoth the "kid" was actually seen with a 15-year-old. Well, we all have to grow up sometime.

"Woman—a dish for the gods!"—A noble thought, though we aren't in the habit of thinking noble thoughts. Blackermen must simply be lacking those traits which made the gods of old—they have been starving for weeks. For example—Blacker's famous exchanges had another in a long series of foul-ups. The dance at UCLA was great but why did it have to end at 9:00?

(Continued on Page 4)

a few students. If the situation does not improve, Officer Newton may have to be stationed there at odd hours to give offenders tickets; this would represent an extra expense to the Institute.

It is too early to tell yet whether students are cooperating as a result of the announcement; at least there has not been a serious wave of complaints in the past week. About fifty more spaces near the houses will be available for students when Church lab is completed, but aside from this there is no immediate relief in sight. It just looks like we're going to be getting PE more than three times a week for a while.

Scholarships for Techmen

More scholarship money than ever before, \$86,600, was given out to assist 156 Caltech undergrads this year, a recent report of the scholarship committee reveals.

Broken down by classes, the figures show grants of decreasing size to the higher classes, although the number of recipients was fairly uniform. Upperclassmen were generally able to find better employment during the school year and over vacation. Seniors often borrow for the last year.

These are the statistics:

Class	recipients	amount
Freshman	41	\$27,150
Sophomore	42	24,050
Junior	40	20,750
Senior	33	14,650
Total	156	86,600

Scholarship grants are given on the basis of financial need, except for the honorary regional scholarships. This year Caltech cooperated with a number of lending West Coast colleges in introducing a standard scholarship application form, to reduce the "buying" of top high school talent, and to insure a more accurate estimate of need. This coordinated scholarship program was successful, and soon will be extended throughout the country.

Special annual donations from corporations like Union Carbide and Carbon, Alfred Sloan Foundation, and Douglas Aircraft accounted for over half the sum. These grants are on a year-to-year basis, and may vary from year to year with corporation profits.

The balance of the amount comes as income from invested funds built up over the years from donations from alumni and friends.

DOUBLED AND REDOUBLED

By Tangoren

Please look only at the South hand. You will have twice as much fun if you do not look at the other hands until after you hear the bidding. You are South, and the following hand has been dealt:

<p>North S—10 7 5 2 H—A K Q 7 5 D—10 8 C—A 7</p>	<p>East S—A K J 9 8 3 H—J 10 6 4 3 2 D—2 C— —</p>
<p>West S—6 H—8 D—A Q 9 7 3 C—Q 10 8 5 4 3</p>	<p>South S—Q 4 H—9 D—K J 6 5 4 C—K J 9 6 2</p>

It was East's deal and John Bailey, East, opened one spade. Tangoren was South, and Tangoren, who loves to bid, decided to overcall two diamonds. West (Tom Trilling) doubled. North (Jim Lewis) took out to two hearts. Bailey doubled. Tangoren tried three clubs. Trilling doubled faster. Lewis tried three hearts. Bailey doubled even faster. All passed.

Tangora laid down his hand as dummy upon Bailey's king of spades lead.

Whereupon he looked at the defensive hands, controlled his urge to laughter and went screaming all around the lounge and courtyard looking for a pencil to record the hand for posterity.

You will just have to take our word for it that this hand was random dealt and was not stacked in any way. Bailey can not always be trusted for an honest deal but he swears up and down that he was not responsible. Obviously some evil disease which preys upon the law of averages had rooted in the dealer's hand and spread contagiously throughout the others.

The king of spades went around, so Bailey tried the ace. When he saw his partner's club slough, he led a low spade, but dummy trumped with the nine of hearts and it held.

Lewis then gloomily surveyed

Quartet here next Sunday

This Sunday, December 5, at 8:15 p.m. the last of this term's chamber music concerts will be held in the lounge of Dabney Hall of Humanities. The Korisheli Quartet will present a concert of music by Benjamin Britten, Beethoven, and Mozart.

The quartet consists of Barbara Brown, violin; Thomas Hall, viola; Donald Cole, cello; and Donald Leake, oboe. They will begin the concert with Benjamin Britten's "Phantasy for Oboe and Strings," which will be followed by Beethoven's String Trio in E flat, Op. 3. The concert will be concluded with Mozart's Quartet in F, K. 370.

It was not a slow lecture, nor a fast lecture, but a half-fast lecture.

Asilomar conference soon; theme is 'where are you?'

Albert the alligator, with a flashing red nose and bright eyes, a Pogo comic strip in front of Dabney, and a handful of earnest undergraduates have acquired that pre-Christmas "Asilomar" look. The campaign has started to recruit Tech men for a week's vacation near Monterey—the Y Asilomar Conference December 26 to January 1.

The word from this publicity crew is that Asilomar is no ordinary vacation, but a stimulating, refreshing change from the Caltech campus. Since most of the Asilomar alumni—the earnest undergrads—can only be heard to exclaim in superlatives when asked to describe their experience, a few facts should be mentioned.

Popular confab

Asilomar is sponsored by California YMCA's and YWCA's and is held the second week of vacation on the Pacific shore near Monterey. Several hundred college students gather for a program that includes lectures, seminars, discussions, generous recreation time, and a restrained but lively New Year's Eve party.

"Where Are You?" is the piercing question chosen as conference theme. The morning platform lectures, by Alexander Miller of the Stanford faculty, will stab at an answer to this profound enigma.

Seminars

Seminar topics include "Co-existence or War?" "The Meaning of Love and Marriage," "Civil Liberties," and "Contemporary Religious Thought." These will be conducted by men well qualified in their subject, such as Dr. Floyd Ross, recent visitor to the Caltech campus.

All time at Asilomar is not devoted to weighty problems,

however. Recreation, planned and otherwise, is a major feature of the conference. Nightly dances, excursions into the wilds of the Monterey Peninsula, ping-pong, volleyball, swimming, sand dune football—co-ed at that—make the conference a spirited affair.

Registration should be made as soon as possible in the Y office, where further information is available.

Asilomar delegates of past years, now available for more dope, include Al Helgesson, Ray Orbach, Don Reiterman, Ed Berry, Duncan MacDuffie, Tom Bergeman, and Jerry Gallagher.

Many girls coming for square dance

There will be another fun-packed square dance next Sunday, December 5, in Culbertson. The starting time has been changed to 7:00 p.m.

As usual there will be a professional caller, instruction in basic square dancing, and crowds of beautiful girls. A greater number of girls than last time is being assured by an intensive propaganda campaign at Oxy, PCC, and elsewhere.

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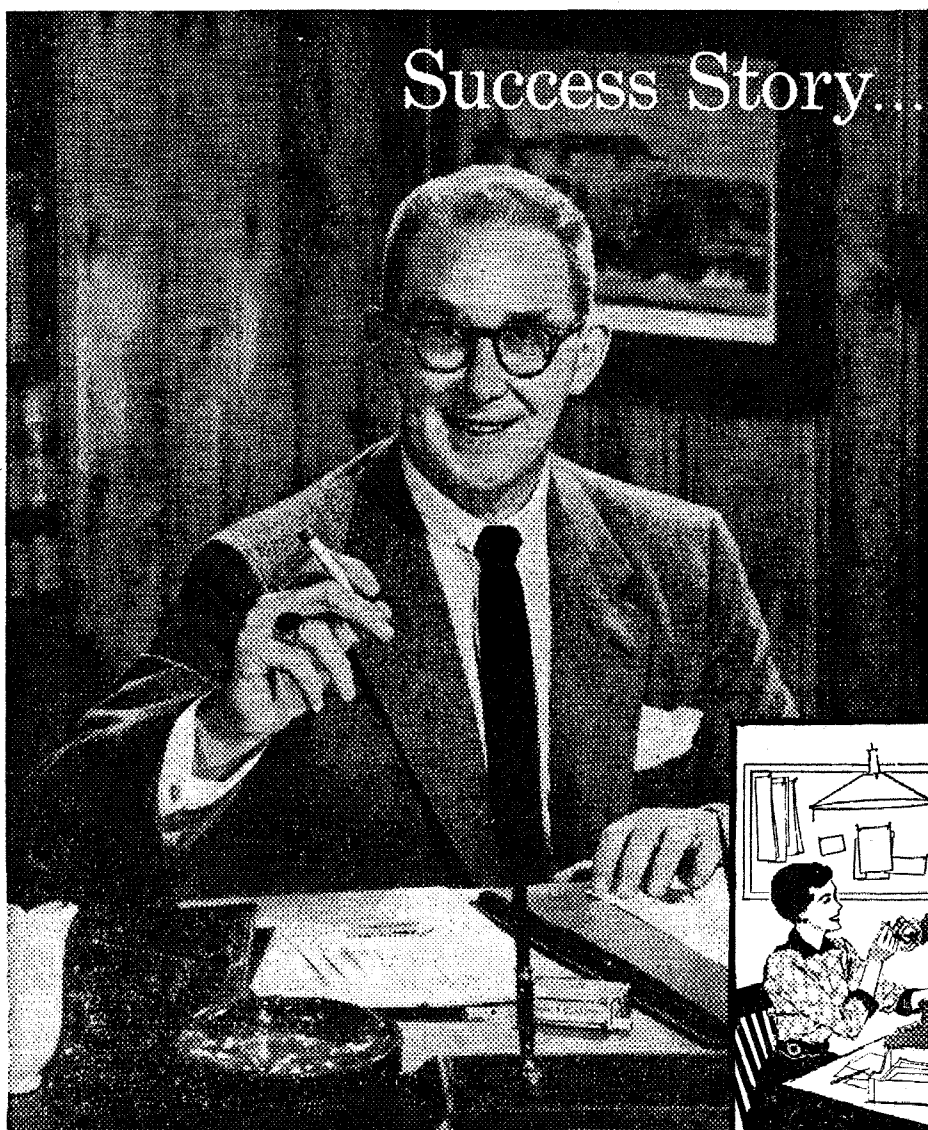
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Be it smog, viruses or genes, Beadle tells 'What Biologists Do'

"What Biologists Do" will be the topic of a talk given by Dr. George Beadle Saturday, December 4. Students' Day visitors should find this quite interesting, especially since the speaker is such an important figure in the scientific world. Besides being the head of Caltech's Division of Biology, Dr. Beadle is now president-elect of the American Association for the Advancement of Science, the country's most important body linking all fields of modern science.

Fleas on the fleas . . .
He will base his talk on the various research projects being conducted at Caltech, thus giving the audience a broad picture of the various avenues of research open to the biologist. Perhaps the most interesting of these fields is virology, the study of viruses, since this has so many vital applications. One group of Caltech virologists has been conducting extensive research on poliomyelitis and has added much to our knowledge of the nature of this disease. Much work has also been done on bacteriophages, the "fleas on the fleas on the dog,"—the viruses

that attack bacteria. Using these minute creatures as guinea pigs, information has been gained concerning the effects of various types of radiation on living cells.

Structure of DNA developed
Of interest to geneticists, chemists, and virologists is the work done by Watson and Krick leading to a model of the structure of DNA, the complex substance found in the genes or hereditary building-blocks. This work has brought a great deal of attention to Caltech's Dr. Watson, indulging mention in Fortune magazine's article on America's top young scientists.

Research on smog
Since most of Saturday's visitors will be coming from areas thoroughly familiar with the Black Curse of Los Angeles, smog, mention will be made of the research concerning this being carried on by the bio-organic chemistry group. Dr. Haagen-Smit leads a group of workers investigating this problem.

Dr. Beadle will make some mention of the work done by all thirteen of the biology subdivisions: animal biochemistry, animal physiology, bio-organic

chemistry, embryology, corn genetics, drosophila genetics, neurospora genetics, immunogenetics marine zoology, plant biochemistry and physiology, plant ecology, psychobiology, and virology and biophysics.

FACULTY DINNER (Continued from Page 1)

there Pauling will travel to Norway, Israel, India, Thailand, Japan, and Hawaii, arriving back in the United States sometime in the middle of March. He will be accompanied by his wife.

Dr. Norman Davidson of the Caltech chemistry department will be master of ceremonies at the dinner. The program following the dinner will include short talks by Dr. L. A. DuBridge, Caltech's president, and Pauling. Also being presented are: "Entwicklung des Paulings — an illustrated lecture on the nature, direction and scope of Dr. Pauling", being given by Dr. Edward Hughes; and "The Road to Stockholm—(a stirring melodrama by Clark, Harrold, Dunitz, Davidson, et. al.—the Chemistry-Biology Stock Company)".

CAMPUS BREWINS (Continued from Page 2)

Those stupid dorm rules. On an individual basis the boys haven't been doing much better. Pope Tambling had a neat evening lined up when his prospective date's mother called at five in the afternoon. Sorry—"No date, my daughter has leprosy, pneumonia, appendicitis and a cold so she shouldn't go out with you. Sorry." (It sounds fishy to us, but honest, that is the way we heard it.)

Stocking, over in Darb House, went home to find out why his girl was such a tasty dish for so many other gods but not for himself. Stock, m'boy, heed these words of wisdom from the Beak: men may be created equal, but gods are not.

"Tales of Jetter" has been playing continuously for some seven terms now, with no apparent ending in sight. It is a must for all who would like to see what the role of an Unfortunate is like. Jetter, the hero in this real-life saga, never quite manages to avoid the bumps and pitfalls of misfortune; unchased by unchaste women but pursued plethorically by policemen, he fends off frustration only with his "neat guy" attitude towards wicked world about him.

Scoop! Rumbblings from the (Continued on Page 5)

Students converge (Continued from Page 1)

Some of the 47 exhibits will include hypersonic wind tunnel research; a new heating device, the solar furnace; an earthquake demonstration by the Civil Engineering department; the analog computer, Caltech's electronic brain; a trip back in time by the study of vertebrates of the past; the synchrotron; and the YMCA exhibit that shows some of the aspects of student life.

Exhibits repeated
Each of the exhibits will be repeated nine times throughout the morning to give as many as possible a chance to see as much as possible. Even so, it would take a full day, 24 hours, to see each demonstration and the lectures that will be held in the afternoon.

Lunch at houses
Lunch will be served at 12:05 for the visiting students in the house to which their school was invited; their teachers will lunch in the Athenaeum and listen to an address by Dr. Hugo Benioff, professor of seismology. Caltech students will eat at 11:40 to leave the dining rooms free for the visitors. At 12:40, students and teachers will assemble on the Athenaeum lawn to be officially welcomed by Jim Adams, student body president, and Dr. Lee A. DuBridge, president of CIT.

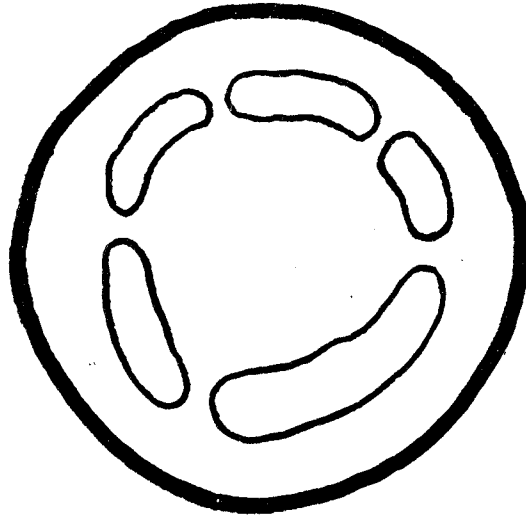
Demonstrations
Following the talks, the group will again break up to go to the first of the afternoon lectures, which will begin at 1:30. The afternoon demonstrations are to last an hour each, and include "X-Ray Diffraction and the Structure of Matter" by Dr. B. G. Bergman, "Atoms in Motion" by Dr. R. P. Feynman, "Construction of Surfaces" by Dr. H. F. Bohnenblust, "Pin Wheels or Pistons—Will the Turbine Replace the Reciprocating Engine?" by Dr. Peter Kyropoulos, "What Biologists Do" by Dr. G. W. Beadle, "Martian Year" by Dr. R. S. Richardson, "Compacted Soil in Modern Construction" by Professor F. W. Converse, "Modern High Energy Particle Accelerators for Nuclear Physics" by Dr. R. V. Langmuir, "Research in Aeronautics" by Dr. Anatol Roshko, and two veteran exhibits, "High Voltage" by Mr. R. W. Thompson and "Liquid Air" by Mr. Earl Jacobs.

Ends at 4:30
When the final demonstrations are finished at 4:30, the students will depart for their respective high schools, all of which are within 50 miles of Caltech.

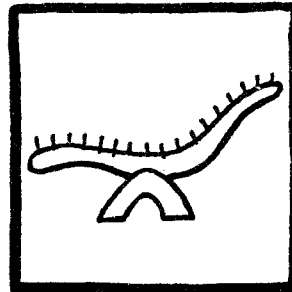
Jim Lewis and Rod Supple are student chairmen for the program and are assisted by Marty Tangora, chief guide; and Dick Morse, head trouble shooter. Faculty chairman is Dr. C. W. McCormick.

Lady (to streetcar conductor): "Will I get a shock if I put my foot on the track?"
Conductor: "No lady, not unless you put your other foot on the trolley wire."

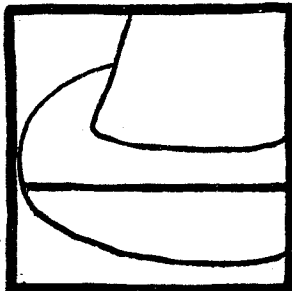
LUCKY DROODLES? OODLES!



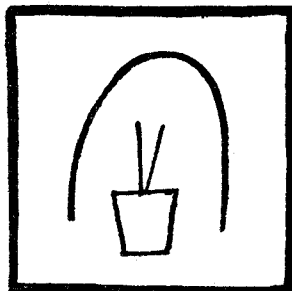
WHAT'S THIS? For solution see paragraph below.



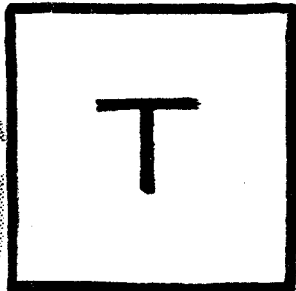
CONTOUR CHAIR FOR INDIAN FAKIRS
Richard S. Nelson
Creighton University



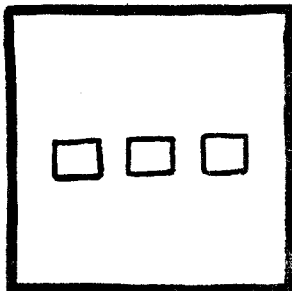
CENTER LINE ON MOUNTAIN ROAD PAINTED BY MAN WALKING BACKWARDS
Philip Wagner
Western Illinois State College



OX MAKING OXTAIL SOUP
Alfred J. Farina
Hunter College



EATEN T-BONE STEAK
Judy Magaram
U.C.L.A.



BULLET HOLES FROM SQUARE SHOOTER
Allan Freund
Michigan Normal

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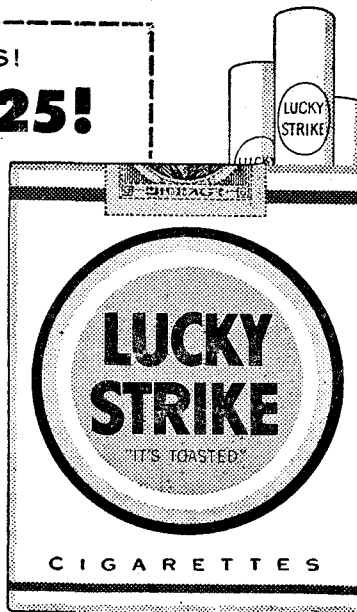
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Dr. Bergman will speak about X-ray diffraction

X-ray Diffraction, one of the newer tools used in the search to find the structure of matter, will be discussed Saturday for a Students' Day audience by Dr. Gunnar Bergman, assistant professor of chemistry and mechanical engineering.

Professor Bergman, who received his basic education in Sweden, and who has been at Tech since receiving his doctorate here in 1951, has focused his research on the problem of determining the structure of crystals. Once the spatial arrangement of the atoms in complicated molecules is known, it is possible for chemists to use that information to derive theories regarding the reasons for the observed properties of matter. This work, carried on by Dr. Bergman and his group of graduate students, is one important phase of the basic research program under way in the chemistry laboratories.

In his talk for prospective scientists, Professor Bergman will outline briefly the possible methods one can use to learn, in minute detail, the way in which matter has been put together. Beginning with the ordinary optical microscope, he will demonstrate its inherent limitations when working with

extremely small objects. Then he will discuss the possibility of using a microscope with very short wave radiation—x-rays—which is theoretically possible, but impracticable because of the difficulties encountered in finding proper mirrors and lenses.

He will explain the physical principles which make it possible to get information by "X-ray Diffraction"; that is, by shooting an X-ray beam at a crystal and obtaining a photograph of the beam as it emerges. By the position of "photographic dots" where something in the crystal—an atom—has caused a part of the beam to change its path, it is possible to learn the arrangement of the "dot-causing" atoms.

In the lecture room, there will be scale models of some of the crystals whose structures have been determined by this technique. Using the models and samples of the X-ray pictures (diffraction patterns) obtained from them, he will show how one gets from a photograph, with many little spots which seem to mean nothing, to a pattern which tells a great deal about the substance.

Cool! lecture on liquid air

Among the more spectacular presentations which will greet the high-school students Saturday afternoon is a demonstration lecture on liquid air.

The lecture, which will be given three times during the afternoon in 201 Bridge, is to be presented by Mr. Earl Jacobs, who is taking graduate courses at the California Institute of Technology while serving as instructor in physics at Los Angeles State College.

For the lecture, a quantity of liquid oxygen and liquid nitrogen, requisitioned from the physics department, will be used to cool different objects of temperatures in the neighborhood of 200 degrees below zero Centigrade. The unusual properties of these objects at such low temperatures will then be demonstrated.

The visiting students can see various fruits and vegetables frozen in a few seconds to such low temperatures that they shatter at the least impact. The magnetic properties of liquid oxygen are also to be exhibited, and it will be shown how the resiliency of some metals such as lead is greatly increased at low temperatures.

Kyropoulos to talk on turbines in ME Students'-Day lecture

Will future American cars be powered by conventional engines or by gas turbines? Prof. Peter Kyropoulos will answer this question in his lecture "Pin-wheels or Pistons," to be given on Students' Day, December 4, at 1:30 p.m.

Dr. Kropoulos is not only a professor of mechanical engineering but also a consultant to General Motors. In this capacity he shares the credit for designing the Firebird, GM's experimental turbine-powered car. He is also chief observer for the Mobilgas economy run.

Turbines unlikely

In the talk, he will describe the turbine power plant, and compare it with the ordinary piston engine. He will show that present turbine engines, because of their high fuel consumption and low efficiency at low speeds, are not suitable for passenger car use.

Constant speed

Future developments in the turbine power plant may make it practical for passenger cars. However, the turbine is essentially a constant-speed device, not well adapted to city traffic.

Higher fuel consumption is also a disadvantage.

Better uses

Principal uses for the turbine engine are found today in the heavy-vehicle field. Present turbine engines are suitable for use in large trucks, busses and tanks. In these vehicles a need exists for an engine which can produce more power at constant speed than a comparable diesel engine, and occupy less space.

In the future?

Trucks of the future may well be equipped with a double power plant; a piston engine for low speeds, with a turbine engine taking over automatically at highway speed.

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Tech staff meets for picture tonight

Pictures of the California Tech staff for the Big T will be taken tonight at 7 p.m. in the California Tech office.

All those students who have been working regularly on the paper are asked to be there. The editors would appreciate it if the staff members would dress neatly—no house coats, please—and appear promptly at 7 p.m.

CAMPUS BREWINS

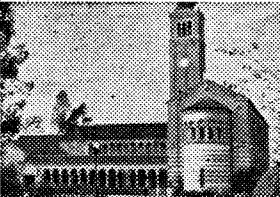
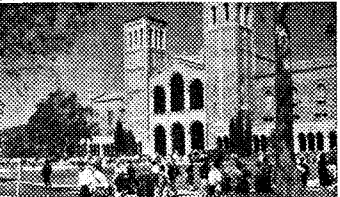
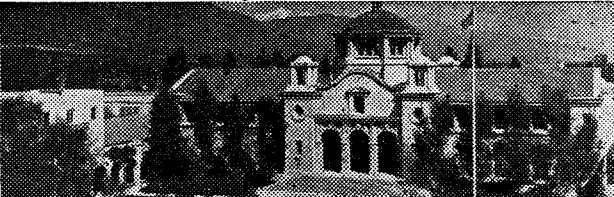
(Continued from Page 4)

Papacy forbode strange things! An upheaval is predicted; Many Cardinals. expected to swell ranks of unemployed! Purvozofovitch considers abdication! Cardinals consider unionizing! Masses consider celebration; But the earth trembles in agonizing awe of the unknown—what will happen? Sleep well tonight, ye sinners, for tomorrow ye may be saints.

"Ah wins."
"What yo' got?"
"T'ree aces."
"No you' don't. Ah wins!"
"What you' got?"
"Two eights and a razor."
"How cum yo' so lucky?"

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HERE'N THERE IN SPORTS

By Arne Kalm

Another Caltech football season passed into the history books when the final gun sounded at the LaVerne game two weeks ago. Rather than look at the dismal past, let's look at the brighter future. Tech fielded a good frosh football team and IF those guys are still around next year to help out there is no reason why we can't have a good season. At least we can hope.

Hard on the end of the football season comes the basketball season. Basketball is one sport in which Tech fields a good team and this year we will be in the thick of the fight for the championship again. The team last year had good crowd support and the advent of the new gym should build up spirit to a new peak. The first game of the league season is a week from tomorrow at 4:15 p.m. at the P.C.C. gym and admission is free.

For the uninitiated, there have

been two significant rule changes this year. The first concerns free throws. This year on the so-called one-shot fouls the shooter will receive one free throw. If he makes it he will be awarded another one; if he misses, the ball will be in play. Fouls committed on a man "in the act of shooting" will call for the usual two shots with no strings attached. The second rule change is that games will consist of two twenty minute halves instead of the previous four ten minute quarters.

* * *

This last is a plug for the fall sports banquet. Go to it! It's Monday night at the Brookside Park Golf Club and it is the only event of its kind in existence. Besides a steak dinner there will be the announcement of the winners of the Wheaton trophy and the soccer trophy. Pole vaulter Bob Richards will speak and Bob Huttenback is the emcee.

Conley wins league honors

Phil Conley of Caltech was chosen quarterback on the second all-SCIC football team announced last week by conference officials. Conley was the total offense leader in the conference and also excellent on defense. He was the only Tech man placed on either of the first two teams.

Pomona - Claremont's conference champions dominated the first team with seven men. Whit-

tier placed two men and Oxy and Redlands each one to round out the first team. Four of the men on the first team are repeaters from last year. They are Prestwich, Schroth, and Pursche of Pomona and McCullough of Oxy.

The team was featured by the lack of a number of men whose names are well-known in the conference. Backs Keith Gaynes and George Sackman of Whittier and Squeek Davis of Redlands and quarterback and defensive guard Ced Scott of Pomona are all missing from the team.

Final SCIC Football Standings

	Conf.			Overall		
	W	L	T	W	L	T
Pomona	4	0	0	8	0	0
Redlands	2	1	1	4	4	1
Oxy	2	2	0	4	4	1
Whittier	1	2	1	3	6	1
CALTECH	0	4	0	0	7	0

FIRST TEAM	Pos.	SECOND TEAM
Jack Fox (W)	E	Jim Mora (O)
Cliff Neilsen (W)	T	Ken Wedel (P)
Paul Womack (R)	G	M. Hoover (W)
Milt Schroth (P)	C	Bob Packer (O)
Al Dias (P)	G	Bill Wittman (P)
Bruce Prestwich (P)	T	Wayne Harris (W)
Bill Schultz (P)	E	Gary Hess (O)
V. McCullough (O)	Q	Phil Conley (T)
Ralph Pursche (P)	H	Carl Palmer (R)
Bill Schmidt (P)	H	Bruce Lamb (R)
John Whitham (P)	F	Scott Fowler (R)

Runners win two meets

Caltech's varsity harriers go into Saturday's conference finals with a very successful dual meet season behind them. The Beavers have won five meets while losing only one, and that to mighty Oxy. Tech wound up second in final conference standings; first in the amateur division.

The All Conference meet is this Saturday morning at Whittier. Tech should hold onto second place in team standings, and Dave Crowther has an excellent chance to bring home an individual medal. If really inspired, Don Lewis or Fred Witteborn might also break into the coveted first five. Race time is 10:30 for the four mile struggle on the Poets' rugged course.

The Beaver frosh came in third in final standings, losing only to Oxy and Redlands. Their all-conference meet is at 10 o'clock Saturday morning, just before the varsity. Beaverbabes Reid Saunders, Mike Rusch, and Tom Moore all have fighting chances to make the first five in the three mile race.

Team wins two

Before vacation, the Beavers closed the dual meet season with resounding victories over Pomona and Pasadena Nazarene. The Nazarene meet was just practice, a four mile prep for the conference meet. Bruce Webb again won for Pasadena, but then came Lewis, Crowther, and Witteborn to sew up Tech's win.

The Pomona meet was the big one, and Tech came through with a decisive 21-35 score over the Sagehens. The meet was run on Mt. San Antonio's fine 2.7 mile course and turned out to be no contest. Crowther and Lewis loped across the finish in 15:15 to tie for first, with Witteborn right behind. Van Walkley got sixth and Bob Tambling finished ninth to assure the Beaver victory.

Gridders end season with 44-32 loss to LaVerne

Conley runs back interception 100 yds; Beavers score four times in last period

In the last game of the season on November 20 the Caltech football team suffered a 44-32 defeat at the hands of LaVerne College. It was a wild and woolly contest as LaVerne piled up six touchdowns before Tech could get a point on the scoreboard and then the Beavers came back with a closing rush which netted them 26 points in the final quarter, but still left them shy of victory.

The Leopards contained Tech almost entirely within the fifty yard line in the first half and left the field on the long end of a 31-0 score. In the second half they started where they left off, scoring

Aquamen finish 2nd in league

The Caltech water polo team closed its season on the Tuesday before Thanksgiving, bowing to Occidental by the score of 8-6. The defeat was Tech's second of the conference season and put the Beavers in second place with a 4-2 record. Oxy had a 5-1 record to take the crown.

Penalties hurt Tech

Caltech was hampered by penalties in the Oxy game, and a big percentage of the Tigers' goals came on free shots. Jim Ball played his usual fine game as he scored five goals for Tech. Bill Davis scored the other goal on a beautiful backhand shot from six yards out. Blake Wallace played a good game at guard until he fouled out. Guards Dick Johnson and Ed Park, forward John Bush, and goalie Fritz Trapnell rounded out the starting lineup.

Five-five record

In conference play this year, Tech defeated Pomona and L.A. State twice and lost to Oxy on two occasions. In practice games the Beavers beat L.A.C.C. while losing to powerful U.C.L.A., Fullerton, and Compton.

one touchdown, and were knocking on the door again when Phil Conley intercepted a pass on the goal line and ran 100 yards, outracing the LaVerne secondary, to score. But the Leopards took the ensuing kickoff and drove all the way back to raise the score to 44-6.

The Beavers took the kickoff on their own 44 and scored in eight plays with John Lukesh going the final seven. Lukesh also turned in a 24 yard jaunt during the drive. Tech attempted an onside kickoff and made it good, taking the ball on their own 48. Conley passed to Ed Nelson for 31 yards and Ted Lang gained eight down to the 13. After a penalty set the ball back on the 27, Lang hit Nelson with a pass that was good for the TD.

81 yard play

LaVerne took the kickoff and drove downfield, but Conley intercepted on the ten. A running play lost a yard and then Conley passed to Nelson who went all the way to the ten before being hauled down from behind, a gain of 81 yards. On fourth down Conley threw to end Luke Bogdanovic for six yards and a TD. Conley passed to Ray Grieser for the extra point which made it 44-25. In the waning minutes of the game Tech took the ball on the 20 and six plays later a Conley to Dick Schmid pass play was good for 55 yards and the final TD.

Consistent attack

The fourth quarter outburst was by far the most consistent offensive attack shown by the Beavers this season, and it allowed quarterback Conley to move to the top of the heap in individual total offense for the conference. Phil had a total of 730 yards in 191 plays in seven games, some twenty yards more than his nearest rival, McCullough of Oxy. Fullback Walt Menetrey gained 34 yards rushing to boost his team-leading total in that department to 256 yards. In pass receiving for the season, Dick Schmid snagged 14 passes for 253 yards, and Ed Nelson caught 8 for 173 yards.

Statistics:

Rushing	TCB	YG	YL	NET
Menetrey	4	34	0	34
Lukesh	3	34	0	34
McDonald	11	50	17	33
Lang	9	29	5	24
Christian	3	14	0	14
Okada	3	5	0	5
Conley	4	1	12	-11
Passing	Att	Comp	Int	YG
Conley	28	10	5	254
Lang	1	1	0	28
Receiving	No.	Yds.		
Nelson	4	149		
Schmid	3	73		
Grieser	2	47		
Bogdanovic	2	13		
Final score:				
CALTECH	0	0	6	26-32
LaVerne	19	12	13	0-44

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Cagers beat Cal Poly; Redlands tourney today

Beavers meet Gauchos first

The Caltech varsity cagers get their first big test of the season this afternoon at two o'clock when they meet the Santa Barbara College Gauchos in the first round of the annual Redlands Tournament. Tech is the top team in the first half of the draw and Pasadena Nazarene is tops in the second half. Whittier, however, is the team to watch. The Poets have three men returning from their starting lineup of last year and they have all of last year's frosh team which won 23 out of 25 games.

Whittier Friday, maybe

Santa Barbara is an unknown quantity at the present, but they are sure to give Tech a good fight. If Tech gets past the Gauchos, they will meet Whittier Friday (assuming that Whittier beats Westmont.)

The results of the "R" tourney may well be indicative of how the conference race will turn out this year as all the schools of the conference are represented. However, last year Tech lost to both Pasadena Nazarene and Pomona and went on to win the league championship.

Here's how the teams stack up for today's games: Caltech vs. Santa Barbara, 2 p.m.; Whittier vs. Westmont, 4 p.m.; Pasadena College vs. Pomona-C Claremont, 7 p.m.; Redlands vs. Occidental, 8:45 p.m.

Caltech will be represented by an eighteen man team, including six lettermen. A quick rundown on the individual players follows:

BILL CHAMBERS, 6-2, 175—Three year senior letterman and two year selection on the all-SCIAC second team. Chambo features a good set shot and scores many a driving layup from his left forward position.

JIM TYLER, 6-3, 185—Another three year letterman, regular right forward. Jim has a tre-

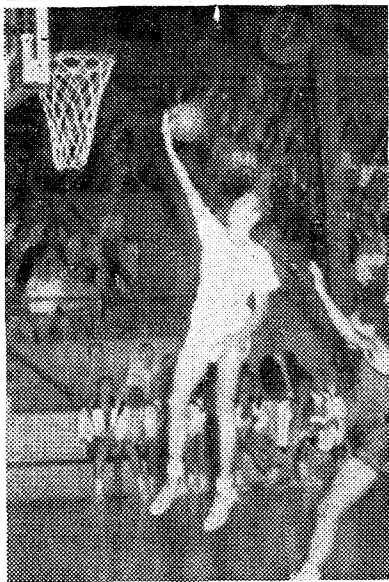
Booters held to tie by Pomona

On the Saturday before Thanksgiving vacation the Caltech soccer team was held to a 1-1 score by a determined team from Pomona. Caltech should have won this game easily, but Pomona's tremendous spirit, contrasted with the apathy of the Caltech players made the score say something else.

Caltech drew first blood when Steve Mak crossed the ball in front of the goal and Sedat Serdengecti pounded it in. The team could not connect for any more and the slim 1-0 lead stood until halftime. In the second half the Pomona forwards got warmed up and consistently ran through the Caltech defense. Arne Kalm stopped many possible goals, but one piddling shot rolled through a bunch of players and into the goal.

This Friday at 3:00 Caltech will meet USC on our own field. This is the first time in several years that USC has fielded a team, but they should be hard to beat.

The JV soccer team lost to the UCLA JV's by 7-0. UCLA improved greatly since the first game of the season when they played a 0-0 game with Caltech and Charlie Miller's boys did not have the speed to match the UCLA forwards.



BILL CHAMBERS, shown here making a layin, will lead the Caltech basketball team into action this afternoon in the Redlands tournament.

mendous jump shot and his dunk is great to watch. Jim, however, broke his hand in the practice game with Cal Poly and will be out of action for an indefinite period.

PHIL CONLEY, 6-3, 195—Big Phil will throw his weight around in the center slot this year. He likes the going rough under the basket and has a fine assortment of shots. A junior, he has a varsity letter and was the leading scorer on the frosh team two years ago.

GEORGE MADSEN, 5-9, 165—George is a two year letterman and the real take-charge guy in back court. At times his floor play is sensational and he sets up a lot of shots for the forwards.

ROLLAND MOODY, 5-9, 145—Moody is also a two year letterman. He is returning to school after a year's layoff and will take over one of the guard slots. He has a fine set shot which should keep the defense spread out.

JIM KOONTZ, 6-0, 175—A junior letterman, Jim will be the third guard on this year's team. He has a great head fake which is always good for a cheer from the crowd.

These are the six men who will form the nucleus of Tech's basketball team. In addition to these there are three men from last year's team who did not earn a letter, PAUL LINDFORS, DAN CHILTON, and GENE NELSON. Nelson and Lindy are out with ailments right now, but they will add needed depth to the team when they return.

There are also nine men up from last year's frosh team. They are: JIM WELSH, HOWARD BLOOMBERG, ED NELSON, BILL HECHT, HERB RAUCH, JIM WORKMAN, BOB GELBER, CHUCK LUKE, and BILL McDONALD.

These men will represent Caltech on the court this year. Tech won the conference crown last year and although we lost Anson and Shanks and Smitty there is a good chance we can repeat this year. The big roadblock is Whittier. Let's all get out and support the team at the "R" tourney. Pasadena Nazarene always brings a big crowd along and there is no reason why we cannot do the same.

Conley leads Tech to victory

The Caltech varsity basketball team opened its season Monday with a resounding 78-39 victory over Cal Poly of San Dimas. The game was typical of early season play with ragged ball handling and some unnecessary roughness, but the Tech team showed great promise of things to come as they shot with deadly accuracy. The Beavers took an early lead and kept building it up as Cal Poly was never really in the game. Halftime score was 42-25.

Center Phil Conley showed that he was going to follow in the footsteps of the immortal Anson as he led all scorers with 24 points. Phil came up with many a beautiful shot and played a rugged game under the backboards. Forwards Bill Chambers and Jim Tyler caged 17 and 15 points respectively to help the Tech cause. Scrappy guard George Madsen showed an uncanny shooting eye as he potted seven out of seven free throws and added three field goals for 13 points.

CALTECH	FG	FT	PF	TP
Conley, c.	8	8	2	24
Chambers, f.	7	3	4	17
Tyler, f.	4	7	2	15
Madsen, g.	3	7	3	13
Moody, g.	3	0	5	6
Welsh, g.	0	2	0	2
Chilton, f.	0	1	1	1
Bloomberg, gf.	0	0	1	0
	25	28	18	78

Frosh Sports Roundup

By Bob Walsh

Tech's fast-finishing frosh footballers blazed to their second consecutive victory, a 24-19 triumph in the finals at Redlands. Alertness combined with outstanding team spirit and coordination gave the edge to the Beavers in the hard-fought contest. Halfback Howie Hilton scored twice, once on a spectacular eighty-yard pass play from quarterback Don Stocking and earlier on a twenty-one yard end run.

End Hugh Hopkins pounced on a fumble on the Redlands twenty-five yard line to set up the first touchdown. Halfback Bruce Blackie ran for fifty-seven yards in a fourth quarter scoring drive. A pass interception and a fifty-eight yard run by fullback Ed Krehbiel enabled the Beavers to maintain their slim lead in the closing moments, as did an alert fumble recovery by Bob Schenter. Tackle Larry Berry also recovered a fumble along with blocking an extra point. Gene Stanley made a good catch of a partially blocked pass and Blackie similarly intercepted a blocked pass.

Bob Mitchell's line play, Krehbiel's punting and Blackie's pass receiving were all superb and Galen Sarno, Lance Hays, and Lane Spencer were the "unsung heroes" in the center of the line. As they have in the past, Krehbiel's punts averaged over forty yards.

The frosh basketball team started practice before Thanksgiving vacation and the men are continuing their workouts at the Presbyterian church gym.

Tech sailors shut out Oxy

Sunday, November 21, the Caltech sailing team defeated Oxy 3-0. Three team races were sailed with three boats per team in the inner harbor of the Los Angeles Yacht Club.

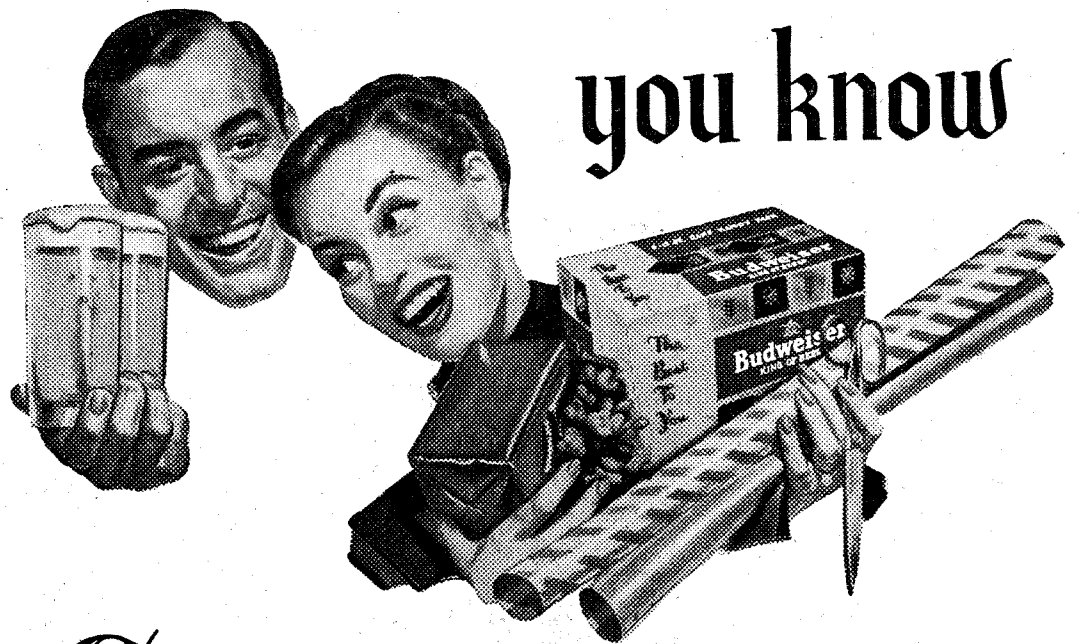
In the first race Fritz Trapnell from Tech crossed the starting line first, just to windward of the first Oxy boat and was able to work into the lead position which he held for the rest of the race. Ron Wann and Jan Arps successfully defended against the other two Oxy boats to give Tech first, third, and fourth.

In the second race Wann got off to a beautiful start and held the number one spot for Tech over the entire course. Arps and Trapnell got into a dogfight with all three Oxy boats right after the starting gun, and then left them behind to give Tech 1, 2, 3, at the finish.

The third race was marked by its lack of wind but team captain Arps and Ron Wann ghosted across the starting line in the one, two positions and held them across the finish line. Trapnell who had been some twenty-five yards from the starting line at the five minute warning gun, took eight minutes to get to the line (believe us, there was no wind!) and consequently held the anchor spot throughout the race to give Tech one, two, and six, still a winning combination, and a 3-0 overall score.

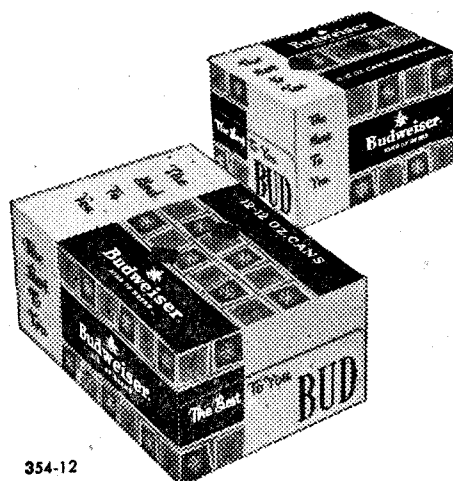
The sailing team will meet Pomona this weekend, and participate in the intercollegiate championships over Christmas vacation.

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President DuBridge makes annual report to Tech board

By Jerry Fried

"In sharp contrast to many recent years in which major national and international events have shaken college campuses, the past year appears relatively uneventful," President L. A. DuBridge stated in his annual report to the Board of Trustees.

While Caltech has recognized its obligation to national defense by its continued operation of the twelve-million dollar a year Jet Propulsion Laboratory and the Southern California Cooperative Wind Tunnel, Dr. DuBridge stressed the fact that "our major interest and service will always be the program of education and research conducted on campus."

Black gold

Reporting on Caltech finances, Dr. DuBridge said that during the year, the net worth of the Institute increased to \$55,785,435 and its endowment capital increased by \$1,164,000 to a total of more than \$30,000,000. This amount may be substantially increased in the future due to the discovery of oil on Rancho Sespe, a property near Fillmore, California, which is part of a trust bequeathed to Caltech by the late Eudora Hull (Mrs. Keith) Spalding.

Expenditures during the past year amounted to about 18 million dollars, two-thirds of which was spent for off-campus operations.

Athletic activity

Dr. DuBridge also commented on the excellent student participation in athletics. He stated that more than one-third of all Caltech students participate in one or more intercollegiate sports and nearly two-thirds in

some form of athletics. Half of last year's seniors had played on varsity teams and one-third had earned varsity letters.

Women at Tech

A tradition has been broken. For the first time in Caltech history, a woman graduate student was admitted in September, 1953. The second woman graduate student was admitted in September of 1954. It must be pointed out, however, that no great flood of "co-eds" is anticipated, since undergraduate admission remains restricted to men.

DOUBLED & REDOUBLED

(Continued from Page 3)

the hand and decided to "cash" his king of clubs. Bailey trumped, of course. Lewis was calmed down and play continued with an eight of spades lead. The board dropped a club on the spade—but Trilling played a diamond, and declarer's ten won. Ranting hoarsely, Bailey demanded that the trick be played over "to make it look good for the Tech." Bailey was restrained. Lewis had now won two tricks—the dummy's lone trump,

and his ten of spades. Quivering slightly, he tried to finesse the board's jack of diamonds. It lost, which goes without saying, and West followed up with his ace of diamonds. Thus far the contact was down one.

Trilling then led a club, and Lewis's ace was trumped in East. East returned a spade and declarer had only to lose one more heart trick, making the rest, down only three.

There is something drastically wrong about this hand. Every hand is an opener, or might be opened. There are fourteen distribution points in the four hands, which must be pretty close to the world's record. There is a singleton or a void in every suit—yet every suit is split seven cards in one team, six cards in the other team.

Dummy's only trick was his singleton trump. Declarer won in his hand only four trumps and his ten of spades. West got four "sloughs" on spades! And only twice in the thirteen leads was there an "honest" trick—four cards of the same suit. Trumps were played on eight leads.

Such madness transcends the laws of probability. Some non-Euclidean mathematic is called for to explain such a travesty. Disease! Unclean!

MARSHAL MONTGOMERY

(Continued from Page 1)

about it." But in addition to this jovial friendliness, the man who led the British forces to victory over Rommel showed Caltech something more—a persuasive personality and a profound, outspoken military mind.

The hope of the free world in a cold war lies in peace—"peace through strength, and strength through unity . . . No nation can stand alone, for isolationism is deadly dangerous today," he stated.

When Molotov turned down Marshall aid to communist satellites in July 1947; Montgomery realized that Russia effectively said she didn't want Europe to recover and to oppose her. At this momentous time the world conflict took shape.

He compared the world situation to a pond with a stone thrown in the middle. We notice waves splashing up on the fringes—Korea, Formosa—but the real problem is in the center of the pond, Germany.

Although six or seven years ago, Germany and Europe would have been overrun by a communist attack, today an invasion would be more firmly met. "It would be a bit of a party, of course," he commented in his

clipped English accent, "but it is not certain they would have it their own way." The Field Marshal expressed a great confidence in the soldiers of western Europe. And, as he said in the press conference, "We are inclined to think the Russian Bear stronger than it is."

To Montgomery, air power is the decisive force today. Armies and navies, now subordinate, must be more mobile, and all need to be able to use atomic weapons. Even in local wars, atomic weapons must be used when circumstances demand it.

All this means that the military is closely connected with science. Because of our thermo-nuclear weapons, we have strength, and we should not be afraid to threaten atomic retaliation if attacked.

To this might be added an earlier comment that reveals his military philosophy on warfare: "I don't make wars. . . Politicians make wars."

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Aeronauts to hear about power plants

Students interested in aeronautics are urged to attend the I.A.S. meeting Thursday, December 2, at 7:15 p.m. in 202 Guggenheim. Mr. Nick Carter, a sales engineer at Pratt and Whitney, will deliver a talk entitled "Optimum Power Plant Selection."

The talk will cover the problems encountered in the selection of the proper power plant to be used in a given airframe. Mr. Carter will explain the pros and cons of the various types of aircraft engines with respect to different types of airplanes.



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