

## Edwin Munger will report on southern Africa for AUFS

A first-hand report on the current political, social and economic conditions in Africa will be presented to the faculty and students of Caltech by Dr. Edwin S. Munger of the American Universities Field Staff, who will visit the campus January 21-30.

Dr. Munger is the second of four AUFS representatives scheduled to report at Caltech during the next three months on their observations in the far east and in Africa.

During his stay at the Institute, Dr. Munger will participate in classroom seminars and informal meetings with students, will address the Y.M.C.A. Graduate-Faculty Forum, and will be the speaker of the Athenaeum Lecture on January 24. His talk to the Graduate-Faculty Forum will be "Inside Afrikaner Nationalism" and the Athenaeum Lecture will be "South of the Sahara: Travel by Water, Air and Rail."

Dr. Munger has spent the past ten years studying the problems of Africa south of the Sahara and has visited all of the sixty territories and major off-lying islands. He has lived in Uganda, the Gold Coast, Southern Rhodesia, and, most recently, in the small South African town of Stellenbosch. His interest in colonial and former colonial areas has taken him also to the Caribbean, Latin America, the Middle East, India, and the Far East. He is a native of La Grange, Illinois, and is a graduate of the University of Chicago, where he received his M.Sc. (1948) and Ph.D. (1951) in geography. He was the first Fulbright Scholar sent to Africa, and for four years was an Associate of the Institute of Current World Affairs prior to joining the American Universities Field Staff.

## Y public affair's committee to meet

A meeting of the Y public affairs planning committee starts off the Y calendar for next week. The meeting, which will take place Monday evening at 7:15 in the lounge, will cover the public affairs program for the two remaining terms. This program consists of community service projects, fund raising drives and other projects which are of service to both the school and the community. All Y members are invited.

### Harvey

Today, Dr. Harvey Eagleston, famed lecturer on Elizabethan literary figures, will speak to the Frosh Lunch Club on "Problems Facing the Caltech Student."

### Athenaeum Forum

On Wednesday, the Y Athenaeum Luncheon Forum will feature Dr. Harold L. Fowler, Professor of History at William and Mary College. Dr. Fowler will speak on one of the vital issues of our time: "Segregation in Virginia."

## Meaning of Tech' education sought at weekend retreat

### Techmen come back from Y student-faculty camp with many suggestions

by Mike Milder

A group of faculty and students returned Sunday from a weekend of thorough and uninterrupted discussion of many problems and discontents facing Tech students. Finding themselves in a unique atmosphere of friendliness and candor, far from academic worries, the participants quickly departed from the suggested philosophical topics, and turned their attention to subjects of immediate personal concern to the students and teachers. They found themselves talking mostly about student morale and associated problems: loss of motivation during undergraduate years, personality and social development of students and dissatisfaction with the curriculum.

## Jorgensen to sit on Board of Trustees

Earle M. Jorgensen, Jr., Los Angeles industrialist, has been elected a member of the Board of Trustees of Caltech, it was announced recently by Albert B. Ruddock, chairman of the board.

Mr. Jorgensen is president and general manager of the Earle M. Jorgensen Company, one of the leading steel distributors of the country, and board chairman of the Baker Steel and Tube Company. He is also a director of the Citizens National Trust and Savings Bank of Los Angeles and of the Northron Aircraft Company.

Active in civic affairs, Mr. Jorgensen is a director of the Los Angeles Chamber of Commerce, the Los Angeles Area Building Funds, Inc., and the National Conference of Christians and Jews. He is currently vice chairman and a member of the executive committee of the Los Angeles chapter of the American National Red Cross.

Mr. Ruddock also announced the election of Shannon Crandall, Jr., of Pasadena as a vice president of the board.

Mr. Crandall is president of the California Hardware Company of Los Angeles, with which he has been associated since his graduation from Stanford University in 1924.

Loss of enthusiasm for science among Tech students commanded much attention. It was proposed variously to be a late adolescent phenomenon, to be a result of saturation with the routine in science, or to be the result of an unsatisfying social environment. Poor social environment was blamed also for deficiencies in personality and social development among Tech students.

Various aspects of the curriculum came under criticism. The student members complained that too many courses are being taught by graduate teaching assistants. The students complained of poor coordination between freshman and sophomore math and physics.

They also mentioned a real lack of means for needed self-

(Continued on page 10)

## Y film series to hold free movie

A free screening of *Death of a Salesman*, starring Frederic March, will be shown this Sunday night, at 7:30 in Culbertson. The film was scheduled for last term, but, due to a mix-up at the post office, was not shown. It is thus being held as an "extra" movie this term.

The "salesman," Willie Loman (March), is an average middle-class man, filled with defeat and frustration as the empty vista of his life confronts him. His dreams of his own greatness are shattered by the growing loss of his sons' adoration, which leads to the tragedy of his death.

*Death of a Salesman*, winner of numerous awards for cinematography and acting, is a deeply moving attempt to analyze the meaning of a "common" man's life.

## Singing starts soon

Rehearsals begin Monday for the Interhouse Sing which will be held February 18th in the Gym.

"Hangtown Girls," a California folk song, will be sung by all four groups, in addition to individual numbers. The glee club will also present several selections.



Photo by D. Groce

Intent faces of listeners (l. to r.) Walt Peterson, Craig G. Elliott and Marty Tangora typify attitudes of camp participants.

## Officers to be nominated soon Frosh elect new officers

### ASCIT ELECTIONS

A nominations assembly for ASCIT officers will be held at 11 o'clock Thursday morning, February 7, in preparation for the elections to be held two weeks later.

Undergraduates may be nominated at that time for the offices of president, vice-president, secretary, treasurer, publicity and athletic managers, first and second representatives, yell leader, rally commissioner, the business managers of the Tech and the Big T, and the editor of the Tech. Both business managers must obtain the approval of the Board of Directors as to their qualifications for the office.

## Houses get more men

### New non-residents

Twenty of the twenty-six off-campus students applying for non-resident memberships in the student houses were admitted at a meeting of the house presidents held last Sunday night at Dr. Mayhew's house. The latter hopes that the remaining boys can be admitted during the term, or at the beginning of third term, at the latest.

The twenty successful candidates were chosen on the basis of indicated house preferences, numbers drawn by lot, and the preferences of the houses themselves. They began exercising their privileges, which include everything except that of sleeping in them, Tuesday morning.

One-seventh of the frosh class ran for office in the class election which was held yesterday. Frosh officers for the first term had been selected at frosh camp.

Running for president were Brad Efron, Lee Hood and Jean Munsen; for vice-president Kent Frewing, Al Laderman and Jim Sorenson; for secretary Ben Arps and Tom Tebben. Candidates for treasurer were Steve Stephens, Chuck Slocum and Lou Toth; for athletic manager Wes Shanks, David Singmaster and Wally Stoltz. Vieing for the two Board of Control positions were Dave Butterfield, Dick Godman, Mike Gospe, Frank Groenman, Dick Hitt, Tom Jovin, Doug McLane, Peter Reny, Doug Shakel, Bob Thomp-

## Board postpones final decision on reduction of athletic awards

After lengthy deliberations the ASCIT Board of Directors decided to postpone a decision on the question of athletic awards until next week. The move was made in order to give ASCIT Treasurer Don Nierlich time to prepare a statement on the future financial situation of the ASCIT.

There are several plans under consideration for the reduction of the athletic awards program. The most frequently discussed plan dealt with giving a jacket rather than a sweater to first-year lettermen and allowing them to purchase a sweater after a second year.

Major opposition to the proposed change was based on the following points:

1. The evil in the present system is not clear-cut.
2. The Board can find no other way to spend the money.
3. Athletic awards are getting more expensive.
4. Some athletes need the incentive of extra awards to participate.
5. Six hundred dollars is not very significant to the student body.

According to Herb Rauch, ASCIT Secretary, the issue should be defeated next week with Rauch, Converse, Kirk, and Van Kirk opposing it.

Those interested in this issue should attend the next Board meeting, which will be held next Monday at 7:30.

## California Tech

Editors-in-chief — Tom Dodge and Frank Kofsky  
 Managing Editor — Bob Walsh  
 News Editor — John Lango

News Staff: Dave Leeson, Bob Lushene,  
 Alan Berg, Lance Wallace, Ted Bate,  
 Steve Emanuel, Alan Carlin

Feature Editor — Mike Maider  
 Brad Efron, Howard Weisberg, Ford Holtzman,  
 Dave Gilson and Gary Yale Breitbord

Sports Editor — Dick Van Kirk  
 Tony Leonard  
 Dave Groce, Randall Schmus

Business Manager — Ed Park

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# Secretary's Report

"SPORTS AWARDS shall be presented by the Board of Directors each year in accordance with precedent and tradition," according to the by-laws of ASCIT. Precedent and tradition are determined by the resolutions to the by-laws which may be amended or cancelled by a simple majority vote of the Board of Directors. Therefore, the ASCIT Board has the complete authority to change the present system of athletic awards.

For three hours Monday night the Board discussed proposed changes in the light of opinion expressed by those interested students who attended the meeting as guests and those lettermen who expressed their opinion in the questionnaires sent them.

Because of the seriousness of the Board's decision, final action on the proposals was postponed until next Monday's meeting.

The following proposals were made:

1) **FROSH NUMERALS.** The size of Freshman numerals shall be reduced so that they may be worn on the letter sweater or jacket.  
 2) **MAJOR AND MINOR SPORTS.** The present difference between major and minor sports awards shall be eliminated. There shall be a "sport designation" given with each letter. Thus, first-year lettermen in present minor sports would probably receive the same letter and sweater which is currently given to lettermen in a major sport. The present circle "T" for junior varsity soccer would be replaced by a block "T". Also, the letter for football might have a small football, for baseball, a small baseball, etc.

3) **SECOND YEAR AWARDS.** The following proposal shall be put before the student body for a vote. Athletic awards shall be a varsity jacket for first year lettermen, a letter for the second year, and a blanket for the third year.

**DISCUSSION.** Remember that these will not be acted upon until next Monday's meeting. Concerning major and minor sport awards, there was no general agreement by the Board on an all-inclusive, clear-cut distinction between major and minor sports. The only basis for distinction was tradition. A distinction between sports by the "sport designation" as is done in many other major colleges could be more appropriate. Replacing the minor sport letter sweaters by the more substantial major sweaters would cost only about \$60 per year.

**SECOND YEAR AWARDS.** The general feeling of the Board was that the present system of second year awards should not be changed unless there were definite reasons. The opinion of the lettermen's questionnaire was indefinite, although most were in favor of the status quo. Reasons to be considered were mainly financial. Giving varsity jackets to first year lettermen and a letter the second year would save approximately \$600 per year. Increased expenditures in the near future may result in a dues increase unless there is some reduction of the budget. Treasurer Don Nerlich will present a report at the meeting next Monday on athletic expenditures and the probability of a dues increase in the future. If you have read this far, you should be interested enough to talk to the Board members you know to tell them your opinion on these questions.

**FISCAL YEAR.** For the reasons presented last week, the Board felt that changing the fiscal year to begin near the start of third term would be an improvement.

**CHARITIES DRIVE.** Rube Moulton announced that the ASCIT Charities Drive will be February 4 thru 8. There will be competition among the five houses. The winning house will receive a dinner with the faculty waiting table and providing entertainment.

Herb Rauch  
 ASCIT Secretary

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Interviews with June engineering graduates will be at the Caltech Placement Office, Friday, January 25th, 9 A.M. to 4 P.M.

## Letters to the Editor

Two bills to give tax relief to college students were introduced recently in Congress by Senator Fulbright (D) Arkansas.

The first would allow an additional income tax exemption for a taxpayer of a spouse, or a dependent child under 23, who is a full-time student of an educational institution above the secondary level. The second bill would allow a tax-paying student to deduct the cost of tuition, books and fees.

In a speech introducing the bill, Fulbright said, "There has been for decades a continued and serious deterioration in the general quality of our education." He went on to discuss the shortage of trained engineers and scientists and the problem of "competitive coexistence" with Russia.

He also said, "It seems to me much more efficient, in the long run, to encourage and enable a parent to pay for his children's education that it is for the government to directly assume the burden of educating its citizens."

Also, these exemptions will tend to increase government income, for college graduates tend to earn more than non-graduates, and, "we must remember that this increased income will be fully taxed."

Finally, Fulbright said, "In addition to these considerations, public and private educational institutions face a precarious future. They are essential to the preservation of our way of life. These bills, if enacted, would give them some assistance and enable them to accept additional students who can pay their own way. Thus, the bills would have a further beneficial effect upon the finances of our fine educational institutions."

This bill is a kind of federal aid to education that comes with no strings attached and no danger of federal control. Further, it will help an important kind of student, the man who works his way through college.

Howard Weisberg

## Munger's A.U.F.S. Schedule

Monday, Jan. 21: 11:00 AM: History 5 (Public Affairs), 206 Dabney "The South African Struggle"  
 Tuesday, Jan. 22: 12:00 noon: Lunch at Athenaeum.  
 7:30 PM: History 124, 7:30 PM: History 124, 648 S. Oakland.  
 Wednesday, Jan. 23: 6:30 PM: Dinner in Student Houses  
 Thursday, Jan. 24: 12:00 noon: Informal discussion with graduate students  
 8:30 PM: Athenaeum dinner and lecture "South of the Sahara: Travel by Water, Air and Rail" (illustrated)  
 Monday, January 28: 8:00 AM Econ 100, 101 Dabney  
 11:00 AM Same as at 8:00 (Econ 100)  
 12:00 noon: Lunch with YMCA undergrad lunch club: "Inside Afrikaner Nationalism" Informal dinner at YMCA residence.  
 Tuesday, Jan. 29: 11:00 AM, H 5, 206 Dabney: "African Nationalism South of the Sahara"  
 12:00 noon: Lunch at Athenaeum with H 5 staff  
 7:30 PM: H 124, at 648 South Oakland  
 Wednesday, Jan. 30: 6:30 PM: Dinner in Student Houses

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Interviews to be held Wednesday, January 30, 1957 may be arranged through the Student Placement Center.

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## Parties head social calendar

Friday night will be dominated by parties in each of the student houses, while Saturday night will be highlighted by a basketball game and dance.

A party-party is planned for Dabney Friday night, a theater party by Fleming, a lounge party by Blacker, and "the greatest house party ever" for Ricketts. The junior class will sponsor a dance after the Whittier basketball game Saturday night; Blacker will also have a skiff band party.

### LETTERS

It has come to the attention of this observer that some rather muddled thinkers in this country want to bring in some Hungarian refugees to live and work in America. Never have I heard of anything so outlandish and so contrary to the ideals of 100% AMERICANISM. These people who are hiding behind the false flag of humanitarianism, either consider us rather stupid or else they are unaware of the hardships and dangers of their actions.

It is a known fact that many of the escapees were once active members of the Communist party. Most of them cannot speak English. They have no idea of what true American democracy means. They and their lower standards of living will displace many of our own laborers, and thus cause widespread unemployment among those families who have been living on our fertile lands for many generations.

Furthermore, one moment of clear, logical thought will at once reveal the fact that there is simply no room for them. The population of this country is rapidly nearing the 170 million mark. There is an extremely serious drought in our country right now, which has caused many farmers to leave their homes and seek work in the city. We cannot allow these foreigners to come in, without any means of support, and send us all into another depression.

Americans! I appeal to you. Communist infiltrators. Join the work now and help oust these Keep our shores free of these foreign elements. For further information on how you can join the movement to Give Hungarians Hell; write your local Ku Klux Klan chapter, or directly to Sen. Joe McCarthy, Washington, D. C.

Gerald L. K. Talmadge

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Kirk Douglas  
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and  
**"SILENT WORLD"**

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in  
**FRIENDLY PERSUASION**

**UPTOWN**

Deborah Kerr John Kerr  
**"TEA AND SYMPATHY"**  
and  
Anita Ekberg  
**"ZARAK"**

**UNITED ARTISTS**

Bob Hope, Katharine Hepburn  
**THE IRON PETTICOAT**  
and  
**ACCUSED OF MURDER**

## ASCIT Board's machinations related by impartial (?) observer

by Ford Holtzman

For many years, the circus provided the American people with an unequalled spectacle. Recently, though, it has been supplanted by the movies and still more recently by television. However, we at Caltech need not rely on such mundane phenomena for our amusement, because we have within our noble portals an august group of dignitaries known as the ASCIT Board of Directors.

President Elliott called the meeting to order with remarkable grace and sang-froid. Every thunder-clap of the gavel was deliberately planned to rebound to the greater glory of the Board and the student body which it represents. Unfortunately, from here on out the situation began to deteriorate.

The meeting opened with a report by Glenn Converse, ASCIT Athletic Manager, on questionnaires sent out to all

the lettermen. In the course of the report the astounding fact came out that lettermen like to receive jackets and sweaters, although they would prefer Cadillacs. Mr. Converse drew the remarkable conclusion that lettermen are prejudiced.

For several minutes the Board discussed the matter in terms of whether the lettermen made sufficient use of their jackets and sweaters to warrant awarding them. However, their peace and quiet was upset by Doug Carmichael, who suggested that the question should be discussed in terms of what the whole student body wants and not just the athletes. At this point several members of the Board and audience polished their halos and delivered short monologues on the virtues of the democratic system.

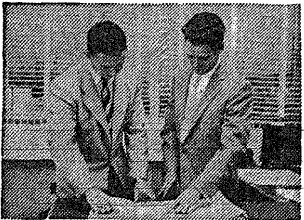
With this passion for majority rule out of their systems, they

(Continued on page 6)



"What really sold me," says Jerry, "was the way they conducted engineering. I'd expected rooms full of engineers at desks. Instead, I found all the informal friendliness of my college lab."

Gerald, an E.E., came directly to IBM from the University of Buffalo, in 1953. Starting as a Technical Engineer, he was immediately assigned to work, with two others, on designing a small calculator. The supervisor of this project was Dr. R. K. Richards, author of "Arithmetic Operation in Digital Computers." Jerry learned a great deal about computers in a very short time. Incidentally, his particular machine is now going into pro-



Assigns problems to his group

duction. As Jerry says, "It makes an engineer feel good to see his project reach the production stage—and to be able to follow it through."

Promoted to Associate Engineer after 16 months, Jerry is now the leader of a nine-man team. He assigns problems to his group for solution, approves their block diagrams and the models they build. Perhaps an hour a day goes into paper work such as requisitioning equipment for his group and reviewing technical publications, in counseling members of his team and preparing for trips to technical society meetings. Apart from his regular responsibilities, he teaches at night in the IBM school.

### Why Jerry chose IBM

Of course, there were other reasons why Jerry selected IBM. He was vitally interested in computers, and IBM was obviously a leader in the field. He comes from a scientific family

## "What's it like to be A PRODUCT DEVELOPMENT ENGINEER AT IBM?"

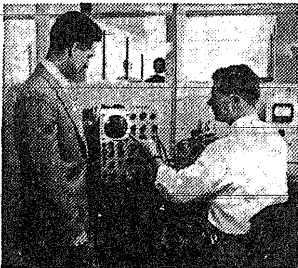
Three years ago, college senior Gerald Maley asked himself this question. Today, an Associate Engineer and leader of a nine-man team, Jerry reviews his experience at IBM and gives some pointers that may be helpful to you in taking the first, most important step in your engineering career.

(his brother is a mathematician) and is fascinated by these mathematical marvels which are revolutionizing man's ways of doing things in so many fields. He enjoys working on large equipment... and on "pulses." "It's more logical," he says. "In computer

plays. The latter is his own interest, which is why he is in advanced machine design. He points out that IBM is careful to take these factors into consideration—another reason, perhaps, why turnover at IBM is less than one-sixth the national average.

### What about promotions?

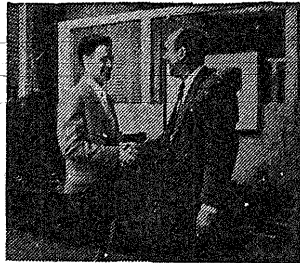
When asked about advancement opportunities at IBM, Jerry says, "You can hardly miss in this field and in this company. They tell me sales about double every five years—which in itself makes promotion almost axiomatic." He endorses the IBM policy of promoting from within, with merit the sole criterion. The salary factor, he remembers, was not his first consideration. While excellent, the tremendous advancement potential was of far greater importance.



This field is so new

work, you can actually see things happening, which is not the case with all electronic equipment today. And it's not all solid math, either. What's more, this field is so new, that pretty soon you're up with everybody else."

Gerald has done recruiting work himself for IBM and believes he understands some of the college senior's problems. "I usually begin an interview by determining a man's inter-



Promotion almost axiomatic



Reviewing technical publications

est," he reports. "Then the diversity of work at IBM enables me to offer him a job which will challenge that interest." Gerald distinguishes between two kinds of engineers—those who like to work on components, such as circuit designs, and those who are interested in the part the component

IBM hopes this message will give you some idea of what it's like to be an E.E. in Product Development at IBM. There are equal opportunities for I.E.'s, M.E.'s, physicists, mathematicians, and liberal arts majors in IBM's many divisions—Research, Manufacturing Engineering, Sales and Technical Service. Why not drop in and discuss IBM with your Placement Director? He can supply our brochure and tell you when IBM will interview on your campus. Meanwhile, our Manager of Engineering Recruitment, R. A. Whitehorn, will be happy to answer your questions. Just write him at IBM, Dept. 8801 690 Madison Ave., New York 22, N. Y.



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# DOUBLED AND REDOUBLED

by K. Sugahara assisted by E. Krehbiel

The hands:

North (Krehbiel)  
 S—A K 7  
 H—9 7 6 5 2  
 D—7 6  
 C—7 6 4

East (Dodge)  
 S—Q J 6 5 2  
 H—None  
 D—5 4  
 C—K Q J 10 9 8

West (Cormia)  
 S—9 4  
 H—Q J 8  
 D—K Q J 10 9 8 2  
 C—3

(South (Rumsey & Price))  
 S—10 8 3  
 H—A K 10 4 3  
 D—A 3  
 C—A 5 2

The bidding: South West North East  
 1 H 2 D 2 H 3 C  
 4 H Pass Pass Pass

Opening lead: Three of clubs

So you think that you've been end played. Look at the fix Big Frank Cormia found himself in one day. Try to figure out how Howard Rumsey made this hand in which there seems to be five "sure" losers, and how he "did it" to Cormia. The bidding was typical of the caliber of bridge played in the lounges. It wasn't the best but it helped Rums in making the hand. Figure it out yet? Well, listen.

Boy genius Howard knew that the opening lead was a singleton from the bidding. He looked at dummy Ed Krehbiel, I mean his cards as he laid them down, and muttered something under his breath about Ed's excreceous bidding and his family background. He noted that the only thing worse than duplication of winners is duplication of losers but pretended that the bid was in a frigid state. Gerhardt Klose, who was looking over his shoulder emitted in his own particular way, "Rrrrrracked," which sort of gave things away.

Rums calmly took the lead with the ace of clubs and saw if the trumps split (which of course they didn't). Since they were vulnerable he almost said "down two hundred points," but then a flash of lightning struck him. He died. John Price, who is ever-present at the table, took over for How and mentally noted that Cormia, West, had started with one club, three hearts and probably seven diamonds. This meant that he had only two spades. He therefore cashed the ace and king of spades and the ace of East, yelled, "Play faster!" Price replied, "S---w you, Tommy," diamonds. He thought a long time before his next play and Dodge, and finally led a small diamond.

(Continued on page 5)



### Mr. Dave Searing will be on campus JANUARY 28

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# Seismologists score fifteen times in 1956

Fifteen major earthquakes were recorded at the Catech Seismological Laboratory during 1956.

Year by year Dr. Beno Gutenberg, director of the laboratory, and Dr. Charles F. Richter, professor of seismology, have kept score on earthquakes of magnitude 7 and over, as they are recorded in Pasadena.

Final checking depends on reports from observatories all over the world. This is now complete through May, 1956. Shocks since then are listed from the Pasadena records only, some may later drop out and others may be added, said Dr. Richter. No earthquakes of magnitude 8 or over has occurred since November 25, 1953, when one occurred off Japan. Dr. Richter states that fifteen is a low number for major earthquakes during one year, for in some years as many as 35 have been recorded. The general earthquake activity of the world has been low since 1953.

The only large shock in the California region during 1956 was on February 9. This was centered about 60 miles south of the Mexican border, but was felt over most of southern California. It had many aftershocks, some of which were felt in San Diego and Imperial Counties, while a few were felt as far north as Los Angeles.

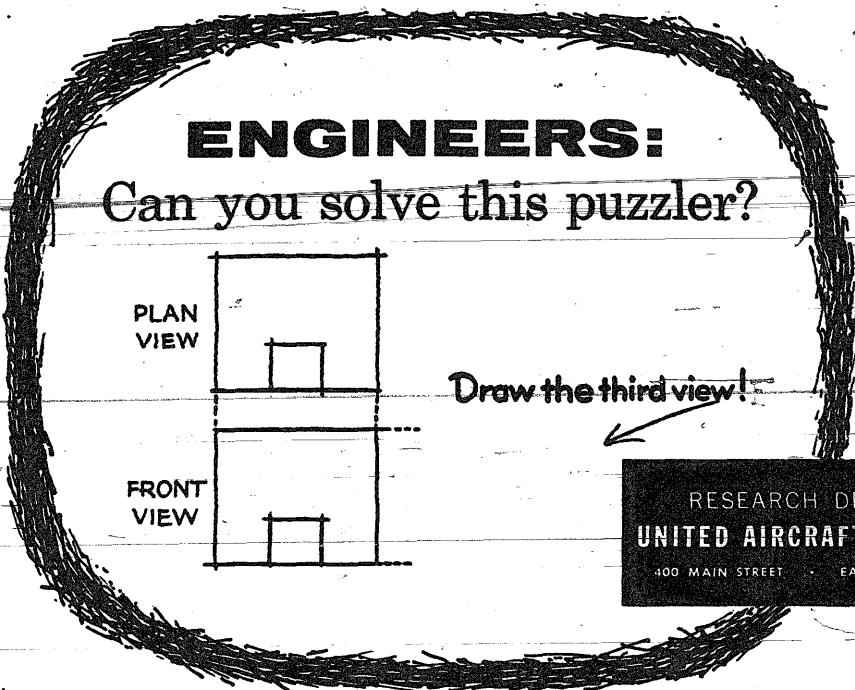
On December 4, a shock of magnitude 6.7 wrote such unusual records that it was difficult to locate. It proved to have originated in the southeast Pacific, more than 1000 miles south of Easter Island.

The largest earthquake, of magnitude 7.8, was in the Aegean Sea on July 9, while the most destructive was in Afghanistan on June 9.

## BRIDGE

(Continued from page 4)

Corm chuckled and took the trick with the eight, then drew a round of trumps. Forced to lead diamonds, he played the King, giving Price a ruff and a slough. Price loved to have Cormia (in the lead, that is), so he sloughed from his hand and the dummy. Another diamond lead allowed Jawn to trump in dummy, leaving him with two clubs and a trump in dummy and a spade and two trump in his hand. A simple cross-ruff made the last three tricks and contract. Simple, eh?



# ENGINEERS: Can you solve this puzzler?

Draw the third view!

Our representative will be on campus Tuesday, February 5, to interview all engineers interested in a career in research. See your College Placement Officer for an appointment.

RESEARCH DEPARTMENT  
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Graduates in Physics, Electrical, Aeronautical and Mechanical Engineering are invited to contact their Placement Officer regarding the Advanced Study Program which enables students to obtain their M.S. Degree while employed in their chosen field.

The complexity of missile systems research and development has created a number of positions for those completing their M.S. and Ph.D. degrees. The positions carry immediate responsibility commensurate with the advanced academic training and experience required.

Representatives of the Research and Engineering staff will be on campus

**Wed. & Thurs., Jan. 30 & 31**  
You are invited to consult your Placement Officer for an appointment.

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**ASCIT BOARD**

(Continued from page 3)

resumed their bids in favor of the jock strap vote.

The fact is this, each year every undergrad pays \$8 for athletic awards, and most of them do not get any of that back. Mr. Van Kirk offered the argument that everybody has the opportunity to win an award. President Elliot chimed in that very few could not get an award if they tried hard enough.

This line of reasoning is very appealing. Likewise, everyone can be a reporter for the California Tech if he pleases, so why not give us jackets? Because they work harder? Not necessarily. And even if they do, they get out of it what they put in.

We doubt that many people's reasons for going out for a sport would be greatly altered by cutting down on the awards system. As President Elliott pointed out, some people must inevitably get more out of the ASCIT

than others. ASCIT could not be run in any other way. However, the inequalities should be diminished as much as possible. Otherwise, we might as well let the treasurer run off with the whole mess.

Whether it pleases them or not, the Board should keep in mind the fact that they were elected to serve the whole undergraduate body, and not just one segment of it. As Carmichael said, the student body leaders really do not represent the school. Perhaps Leeson was right when he said the school does not want to be represented. I hope not.

One reason for preserving the status quo was that we have had this system of three awards for a long time, and so have most of the other schools in the league. If everybody operated that way, we would really get a lot done. But you must remember that the word change throws the Board into violent spasms. Not that they are conservative or lazy or anything of

that nature. Oh, no. It's just that they are so modest they do not want to presume to be more fit to deliberate on the subject than their ancestors.

The only reason for cutting down on the awards is to save money. And that is a pretty good reason in my book. Perhaps the loudest objection to cutting down on the athletic awards was that there is nothing to do with the money we would save. Carmichael suggested that we might cut down on the dues, but that idea rather shocked the Board.

Mr. Krehbiel said from the audience that we should not lower the dues now because we might want to raise them later, and that would "raise a big stink." I hope the federal government does not feel that way.

Carmichael looked hard into his crystal ball and suggested that increasing costs might necessitate a raise in the dues. But, unfortunately, a cross-examination of Don Nierlich served to show only that the

treasurer did not have the slightest idea what future expenses would be.

At about this time the fact that Farago will probably go bankrupt third term entered the discussion. It was suggested that a special assessment might be needed to keep it alive. Various members of the Board admitted under their breaths that a special assessment amounted to a raise in dues and quickly dropped the subject.

So far as I am concerned, this whole problem has been approached from the wrong direction. At first the question seemed to be "What do the lettermen want," and then, in the course of discussion, it changed to "What do they deserve?" It should not be hard to guess what they want. And if everybody got what he deserved, most of us would have been dead long ago. The ASCIT Board is theoretically an organ of the undergraduate body, and as such it should only consider what is best for the student body.

I concede that athletics should be encouraged by the ASCIT. I concede that athletic awards should be given. But I cannot see why they should be so expensive. As President Elliot said, the athletes will get just about as much out of recognition for their efforts no matter what form that recognition might take. Or as Doug Carmichael said it, the number of stripes on the sleeve is what counts. I do not think there will be a letdown in athletics just because athletic awards are made less expensive. There is more value to the individual in athletic participation than the monetary worth of the awards they receive.

I do not know exactly what form the reduction should take. But a considerable part of that \$6 per year each of us has to pay should be lopped off our bill. We don't pay athletes around here. We honor them for what they are worth. We don't clothe them.

**PROBLEM:****HOW DO YOU MEASURE YOUR FUTURE?**

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WRITE: SCIENTIFIC STAFF DIRECTOR, LOS ANGELES 54, CALIF.

# Chamber music concerts draw reviewer's applause

by Jacob Lübliner

One of the most successful cultural activities which Caltech has had the opportunity of enjoying is the series of chamber music concerts in Dabney Hall.

This series is a part of an extensive program of concerts under the auspices of the Music Performance Trust Fund of Local 47; and in all the squabbling which has beset Los Angeles musicians no one has yet questioned the merits of this program.

Surely one may ask, "What can be wrong with free concerts featuring first-rate performances of great music? Well, there's nothing wrong with their being free; but the performances tend to place chamber music in the wrong perspective, incurring an essential contradiction between the nature of chamber music and the manner of performing it.

It is ironic that chamber music should today be regarded as the most abstruse form of an art which is already too far removed from something called "popular" taste. For, until the early nineteenth century, chamber music was just what the name suggests: music to be played at home, by amateurs bent on nothing more than the enjoyment of playing collect-

ively. Little virtuosity was required; the trio sonatas of the baroque and the string quartets of the rococo have none of the technical brilliance of the concerti and symphonies of the same periods.

The first public performance of a string quartet took place in Vienna in 1804; and, beginning with Beethoven, the demands made on performers by composers of chamber music became greater. However, we must not overlook the fact that musical education progressed, too. In addition, the mass production of musical instruments made possible the fact that by the late nineteenth century nearly every German and Austrian middle-class family was a chamber-music society. Doctors, teachers, clerks would spend their evenings playing quartets, for better or worse, as a matter of course.

Despite the omnipresence of television and records, there is on reason why the pastime of chamber music should not be revived. According to industry reports more people are buying and learning to play musical instruments of all kinds than ever before. And any number, from two upward, may participate; it doesn't matter what instrument you play—such composers

as Hindemith and Creston and Haydn and Handel have seen to it that not-too-difficult-to-play music is available for the most unlikely combinations.

The only necessary ingredient for the success of a group is the enthusiasm of the members. Technical perfection matters little: you may take your part and practice it alone, but then you may prefer to plunge right in, or play with a Music-Minus-One record. If you make mistakes, who'll notice them? If your fingers get stuck, the other guys will carry on until you find your place.

Nothing in the preceding is to be construed as disparagement of such fine groups as the Hollywood Quartet. On the contrary, one need only watch them to see what pleasure can be derived from playing chamber music.

## Iorillo will swing

Tony Iorillo will lead a small combo for dancing in Throop Club after the Saturday night basketball game with Whittier.

Refreshments and decorations will add to the two-hour party, presented by the junior class.

## Campus to Career

An executive of the Warner & Swasey Co., leading manufacturers of machine tools, textile machinery, earthmoving equipment, and other precision machinery, will visit California Institute of Technology on February 6th to interview high caliber men with technical backgrounds or mechanical interests who are looking for a career in research, development, engineering, sales, manufacturing, or finance.

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Campus Interviews — January 31 — February 1

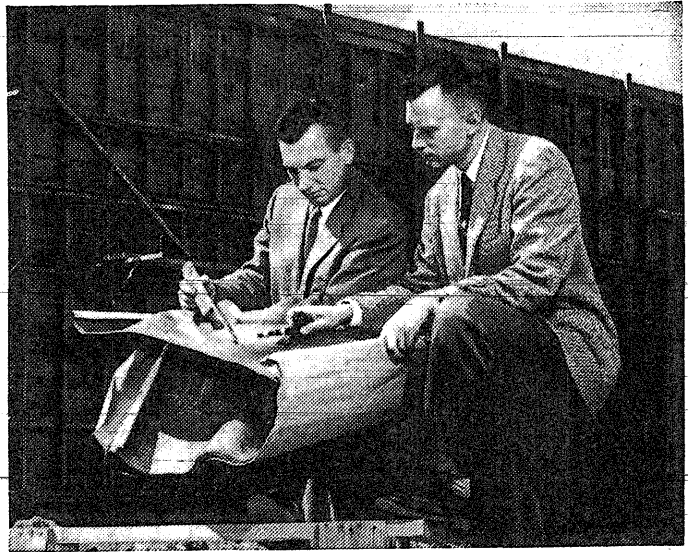
By

E. W. Morris — R. K. Collins — Arthur Roden

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## A Campus-to-Career Case History



Claire Hruska (left) discusses progress of a new telephone building with the contractor.

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Claire Hruska graduated in 1953 from the University of Washington with a B.S. in Civil Engineering. Today he's with The Pacific Telephone and Telegraph Company.

"I supervise construction at every stage," Claire says. "Every telephone building is designed around the equipment that will be in it. When a building is needed, I work closely with the architect to make sure his plans fit the needs. Then I check the contractors' bids. When the contract is let, it's my responsibility

to see that the builder sticks to the plans in detail.

"Right now I'm handling the construction of several telephone exchanges, a large office building in downtown Seattle, and additions to other buildings. It's satisfying work, because I'm on my own a lot, and getting the jobs done is up to me."

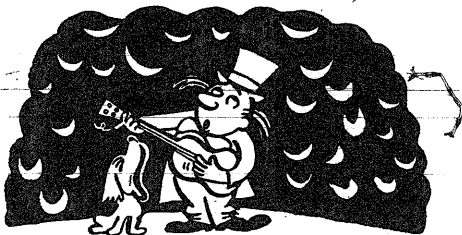
"I've got a career that offers big assignments and responsibilities, and real opportunities to get ahead in a business that's growing rapidly. That's what I was looking for."

Claire Hruska is typical of the many young men who are finding rewarding careers in the Bell Telephone System. For more information on career opportunities in the Bell Telephone Companies, Bell Telephone Laboratories, Western Electric and Sandia Corporation, see your placement officer.



Bell Telephone System

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# PazNaz dumps Beavers with first-half point spree

Caltech's varsity basketballers, still struggling to reach the point-a-minute classification, took a 67-35 beating from Pasadena Nazarene Tuesday in the Scott Brown gymnasium. The classy Crusaders from across town utilized a fast break off a zone defense to pile up a 28-9 lead in the first ten minutes of play, and the outcome was never in doubt after that.

John Slevcove and Jim Bond were the spearheads of the Paz Naz early pointmaking rush, as the Beavers were completely stymied in their attempts to crack the Crusaders' zone. Pasadena was exceptionally hot on field goal attempts during this period, missing only two attempts from the floor.

The game was remarkably free of fouls, with only eight persons called on Pasadena and six on Caltech. Both teams were inaccurate from the free throw line, the Beavers making seven of 13 attempts and the Crusaders only three of eight.

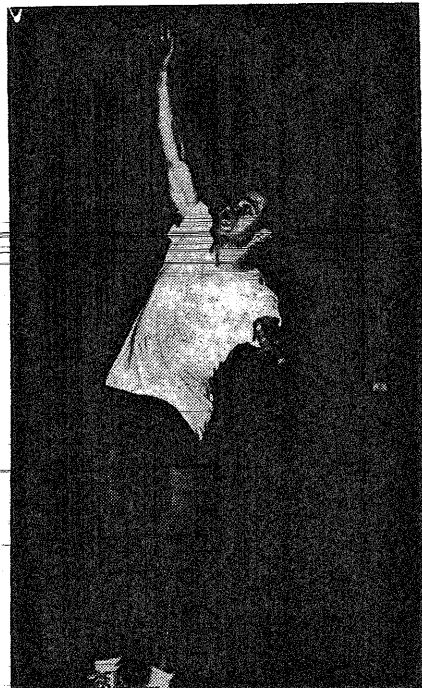
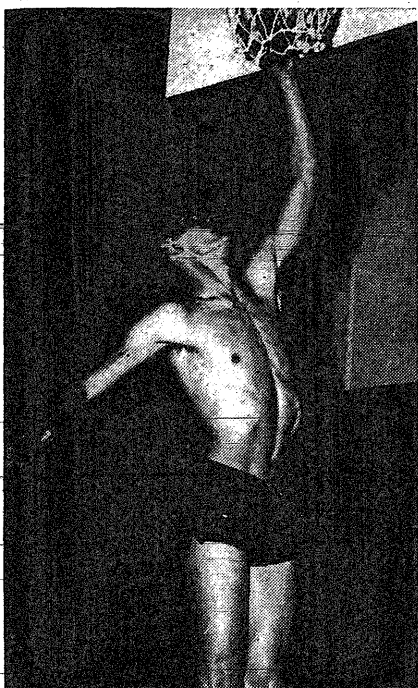
Bond was the game's leading scorer, hitting for 14 points as well as controlling most of the rebounds throughout the game. Slevcove and Brower had ten each for Paz Naz. For Caltech, it was Larry Kraus with 11 points, followed by Glenn Converse with 7 and Jim Welsh with 5.

### Pasadena College

Player	fg	ft	pf	tp
Glenn, f	4	0-0	1	8
Brown, f	1	0-0	0	2
Bond, f	6	3-4	1	14
Hubbard, f	1	0-0	0	2
Pyle, E., c	3	0-0	2	6
Porter, c	4	0-0	0	8
Wallace, g	2	1-2	2	5
Brower, g	5	0-0	0	10
Cleeve, g	5	0-2	2	10
Metheny, g	0	0-0	0	0
Pyle, D., g	1	0-0	0	2

Totals ..... 32 3-8 8 67

Halftime score, Caltech 20, Pasadena College, 40.



DICK VAN KIRK and RAY MAGDALENO, ball-hawkers deluxe for the Caltech hoopsters, warm up in practice sessions for the invasion of the Whittier Poets into the Scott Brown Gymnasium Saturday night. Van Kirk, junior forward.

### BOX SCORE

Caltech Player	fg	ft	pf	tp
Converse, f	2	3-5	0	7
Bloomberg, f	0	1-2	0	1
Rauch, f	0	0-0	0	0
Van Kirk, f	1	0-1	3	2
Kraus, c	5	1-1	0	11
Welsh, g	2	1-2	2	5
Bass, g	0	0-0	0	0
Workman, g	1	0-0	0	2
Magdaleno, g	1	1-2	0	3
Newman, g	2	0-0	1	4
Totals	14	1-13	6	35

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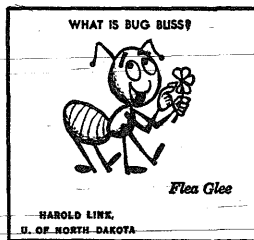
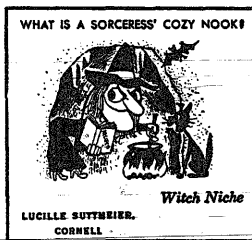
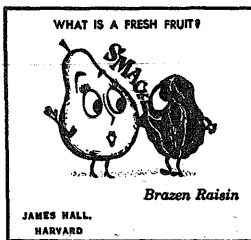
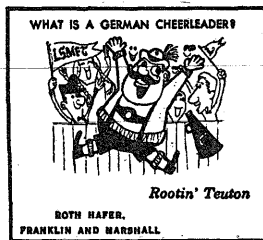
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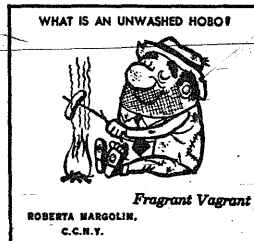
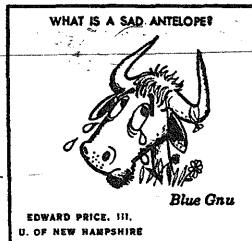
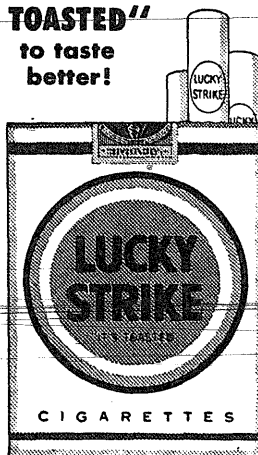
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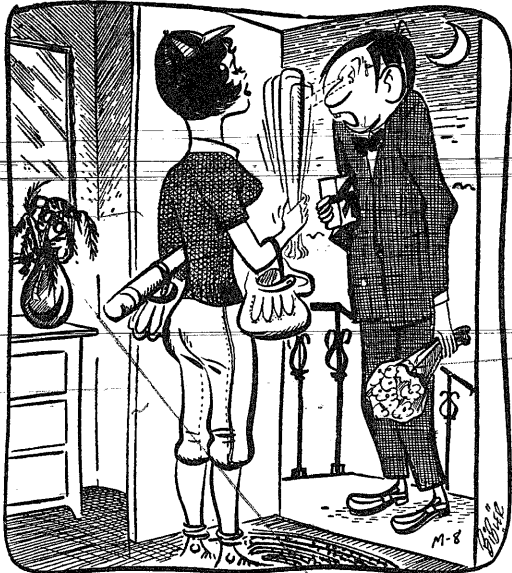
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**LITTLE MAN-ON CAMPUS**

by Dick Bibler



"BUT WHEN I SAID PLAY BALL WITH ME TONITE I HAD SOMETHING ELSE IN MIND."

# Beavers host Whittier five on Saturday

Coach Carl Shy's varsity basketball team hosts Whittier College Saturday, as the teams complete the first round of conference play in a battle of first and last-place teams.

The Poets, currently residing in the top spot in the SCC, have a 3-0 record in conference play and have won ten of fourteen games on the regular season. Caltech is still looking for its first win in several seasons.

Whittier Captain Bob Bland is the leading scorer on the squad, with 191 points in 14 games for a 13.6 average. Chuck Hasley, Earl Reese, and Bob Zabel all have scoring averages of over ten points a game for the Poets.

In conference play, Whittier has beaten Pomona-Claremont, 75-58; Occidental, 71-65; and Redlands, 55-49. Caltech has lost to each of these teams by twenty points or more, and will go into the game a decided underdog.

Probable starters for the Beavers are Glenn Converse and Dick Van Kirk, forwards, Larry Kraus, center, and Jim Welsh and Fred Newman, guards. The Caltech squad was temporarily trimmed to ten men with the loss of Bill McClure, 6-5 forward, for a few days because of a cut in his forehead which required several stitches.

Next Tuesday the Beavers face the Cal Poly Broncos in a return encounter in the Scott Brown Gymnasium. Earlier in the season the Broncos took an easy 73-25 win over Caltech.

# The Sports Corner

by Dick Van Kirk

During the last few meetings of the ASCIT Board of Directors, heated discussions, or at least something as close to a heated discussion as will ever occur at an ASCIT Board meeting, have taken place concerning proposed revisions in the athletic award system presently used by the student body. Among the suggestions being considered by the board is one which would eliminate the difference between major and minor sports awards.

This would involve doing away with the present minor sport sweaters and major sport jackets, giving all first year lettermen in any sport a sweater equivalent to our present major sport sweater and second year lettermen jackets exactly like the present minor sport jackets. The separate sports would be designated by small emblems to be placed on the letters.

During the discussion of this proposal at the last Board meeting, the problem of just what constitutes a "major" or "minor" sport was brought up. As far as this party can presently determine, any sport in which all SCC schools regularly field a team is termed a major sport by the athletic heads of the various schools. This is fine for publicity purposes, but when the time comes to present athletic awards, should the athletes who participate in minor sports receive a lesser award than their "major" sport counterparts merely because of the "complete conference participation" ruling?

In general, athletic awards are given at Caltech on the basis of recognition of participation, degree of skill, and to encourage further participation by members of the student body. Naturally there is no hard and fast set of rules to determine who shall letter in a sport and who shall not, but these criteria usually enter into the deliberations. If you weigh participation and amount of work put into a sport, then it is reasonably obvious that members of the water polo and cross-country squads put in as much, if not more, work than players on the "major sport" baseball team.

Baseball at Caltech is somewhat of a paradox, too. Listed as a major sport, it has an average attendance closely approximating that at water polo games. Should public interest be considered in differentiating major and minor sports? In the opinion of most people it should very definitely be a consideration. If you used this as the sole criterion, then football and basketball stand head and shoulders above the other sports.

As you see it, it is a complex situation when you sit down and try to decide what to give to who. When you try to decide what is a minor sport and what constitutes a major sport you run into arguments from every sport's followers.

Under the present system, the first year awards in minor sports are, in the writer's eyes, inferior both in appearance and construction. As long as we can afford to give a better award to the "major" sport athletes, why make some vague, arbitrary classification of sports to discriminate against skilled athletes merely because one or two schools in the conference don't have the material and/or interest to field a team in a particular sport. I would like to see this discrimination ended.

# Slow second half nets Tech another loss

Redlands' smooth-working Bulldog basketballers extended Caltech's winless string to thirty-two straight games Saturday, taking a 66-41 win Saturday on the victors' home court. The loss brought Caltech's conference record for the '56-57 season to 0-3, and their overall season mark to 0-6.

Accuracy at the freethrow line combined with spurts of fast-breaking offense kept Caltech close to Redlands in the first half. The Bulldogs countered with a slick screening offense which sent up guards Sam Gardner and J. R. Perkins for several short jump shots and layins. Redlands scored 35 points in the first half to leave the floor leading by ten points.

The second half began with a typical Caltech scoring rush of no points in over seven minutes, as Redlands increased its lead

to twenty points. Late in the period, however, a scoring splurge by junior forward Glenn Converse of the Beavers kept Redlands from pulling away any farther. Converse and Larry Kraus began controlling the rebounds for Caltech.

Gardner was high scorer for the game with 23 points for Redlands, while Converse contributed 13 for Caltech. Perkins had a contribution of 12 points

## Interhouse Sports

Discobolus is still atop Ricketts' piano as the men in maroon fought off Blacker, 3-2, in tennis.

The feature match of the contest came Monday, when Ricketts' Howard Rumsey and Gary Breitbard defeated Stu Goff and Hal Noltmier, 6-4 and 8-6. The second set featured the nifty net play of Noltmier and the drastic tactics of Rumsey-Breitbard. The Ricketts duo blew a 5-1 lead to a 5-6 deficit but came back to take the last three games for set and match.

Saturday is the day of the Interhouse tennis matches. Each house enters three singles men and a doubles team, and each man plays a round robin in his ranking consisting of 12 games against each opponent. Play is scheduled to start at 9:30 a.m.

## Sailing, sailing . .

Batten the hatches, men, make way for the Caltech Sailing Club. Led by Commodore Gordon Fullerton and Vice-Com Gordy Barienbock, the Tech navigators are busily preparing for the annual Caltech Regatta. This event draws sailing teams from almost every college in the area to the Los Angeles Yacht Club for a day of sea churning competition.

The sailing club has room for more potential seafarers. Those interested should see Jim Weaver in Fleming House.

# WESTINGHOUSE INTERVIEWS FOR ENGINEERS & SCIENTISTS

## Jan. 31 - Feb. 1

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## Publicity Manager

I think the best feature of the office of Publicity Manager is that it is the most flexible position on the Board of Directors.

Logically enough most people think that the Publicity Manager's main task is publicity. This notion is probably as false as it is logical. In the "old days" (before the establishment of the News Bureau), he was solely responsible for distributing publicity, but now he informs the news bureau of student body activities, then they take it from there. (Such things as the Interhouse, the Mudeo, and the Homecoming Queen Contest are publicized in this manner.)

With the publicity load eased considerably, he can direct his attention to other matters that come before the Board. By taking a particular interest in areas that concern the Board, but do not fall under any Board member's specific responsibility, he can provide valuable information on various problems. (For example such things as the Open Forum, possibilities for the new student houses and educational policy.)

The Board thus has a member who is free to delve into major miscellaneous problems.

Because of the flexible nature of the office and the wide range of fields that he is expected to be acquainted with, he is often appointed to committees of an "Ad Hoc" nature. (Organizations such as the Model UN and the educational policies committee are typical of this sort of thing.)

The Publicity Manager also supervises the darkroom and bulletin boards and ASCIT election campaigns. Then, too, once each year he is expected to make a sacrifice and conduct the Homecoming Queen contest.

We are drawing up a brochure on the Interhouse and would like to acquire some pictures for it. We would appreciate seeing anyone who has some. We pay cash.

I'd like to talk to anyone interested in running for the office in the coming election. As far as experience or knowledge goes, a reasonably broad range of interests and some knowledge of publicity are helpful.

### STUDENT-FACULTY

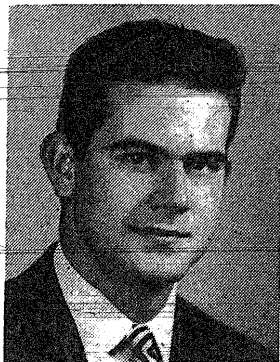
(Continued from page 1)

expression in their undergraduate science courses.

Students and faculty agreed on the present inadequacy of the advisor system.

No plans for immediate sweeping reform came out of the conference. The conference proved its worth in enabling many students to crystallize and voice their thoughts on several important problems. Interested faculty members were acquainted with important aspects of student life about which they were never aware. And contacts were established between teachers and students providing channels for communications and cooperation on these and future problems.

Camp Hess Kramer and its surroundings supplied ample opportunities for recreation. Leisure hours found the men hiking, playing pin-pong, volleyball, tennis, or bridge, and singing around the piano.



Dick Kirk

## Scholarships offered for study abroad

The Institute of International Education has announced a number of scholarships, fellowships and teaching posts in Austria and France to be awarded to American candidates fulfilling certain qualifications. The candidates must be unmarried, have a Bachelor's degree, and be of high moral character. The fellowships cover expenses but do not include travel expenses. Application blanks may be obtained by writing the Institute of International Education, 1 East 67th Street, New York 1, New York.

## Caltech portraits shown in exhibit

Portraits of personalities who contributed much to Los Angeles' emergence as a great metropolis in the twenties and thirties will be featured at the first memorial exhibit of paintings by the late S. Seymour Thomas, opening next Sunday (Jan. 20) with a reception from 3 to 5 p.m. at the Municipal Art Gallery in Barnsdall Park, Los Angeles.

Among the portraits to be seen at the exhibit opening Jan. 20 will be those of the Rt. Rev. Joseph H. Johnson, John Stephen McGroarty, Joseph Sartori, the Rt. Rev. W. Bertrand Stevens, and the "big three" at the Caltech—Drs. George E. Hale, Robert A. Millikan and Arthur A. Noyes.

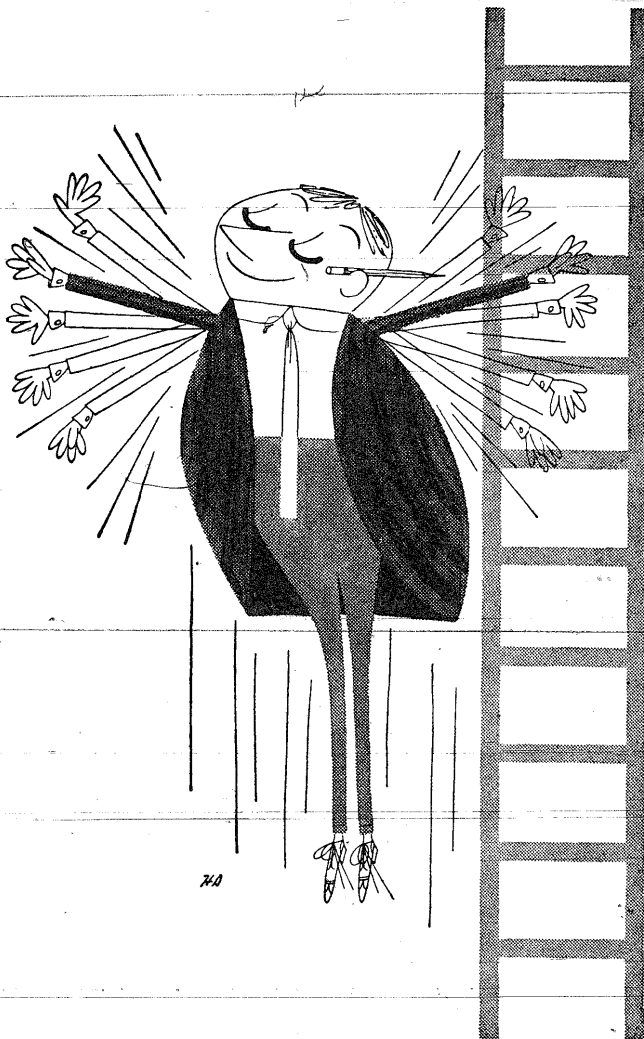
## Record library obtains albums

The recent addition of forty new albums in the humanities library brings the grand total to about 360 albums that students may borrow for private listening, according to librarian Bill Stanley.

The new additions include the scores of several recent Broadway shows, some operas, and various chamber music and orchestral works.

The records are borrowed in the same manner as borrowing books. A maximum of two LP albums may be borrowed. Albums can be kept for a maximum of two weeks.

In addition to these, about one thousand additional classical albums are kept in the Musicale.



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