California Tech

Associated Students of the California Institute of Technology

Volume LXII. **Pasadena, California, Thursday, January 12, 1961** **Number 13**

Tech Adviser System Gets Drab O.K.

BY JOHN TODOROFF

Two campus committees, the ASCIT Educational Policies Committee and the Student-Faculty Relations Committee, have examined the Caltech adviser system and sort of concluded that despite great lack of enthusiasm by adviser and advisee there is nothing drastically wrong in this area.

The poll circulated by the EPC late last term showed 69 per cent of the students satisfied with their adviser. Only 4 per cent claimed their adviser had inadequate information about option courses, although 33 per cent complained that advisers were not very helpful on courses outside of the option.

Slightly less than half of the students have thoroughly discussed their educational plans with their adviser. Forty-seven per cent see their adviser more often than preregistration week, the average of these being 2.5 times per term.

Two-thirds of the students reported advisers interested in their academic problems.

Most of the student complaints centered on the same handful of advisers.

The Student-Faculty Committee talked with the professor in each department responsible for the adviser system. They discovered a great willingness to find an adviser the student is happy with if at all consistent with the faculty work load. The man to talk with about changing advisers is Dr. Lauritsen in physics, Mr. McGaha in geology, Dr. Fuller in math, Dr. Beadle in biology, Dr. Wasser in chemistry, and Dr. Clark in engineering. The physics and math departments are overcrowded with

(Continued on page 3)

Stable Defense Systems To Be Wiesner Topic

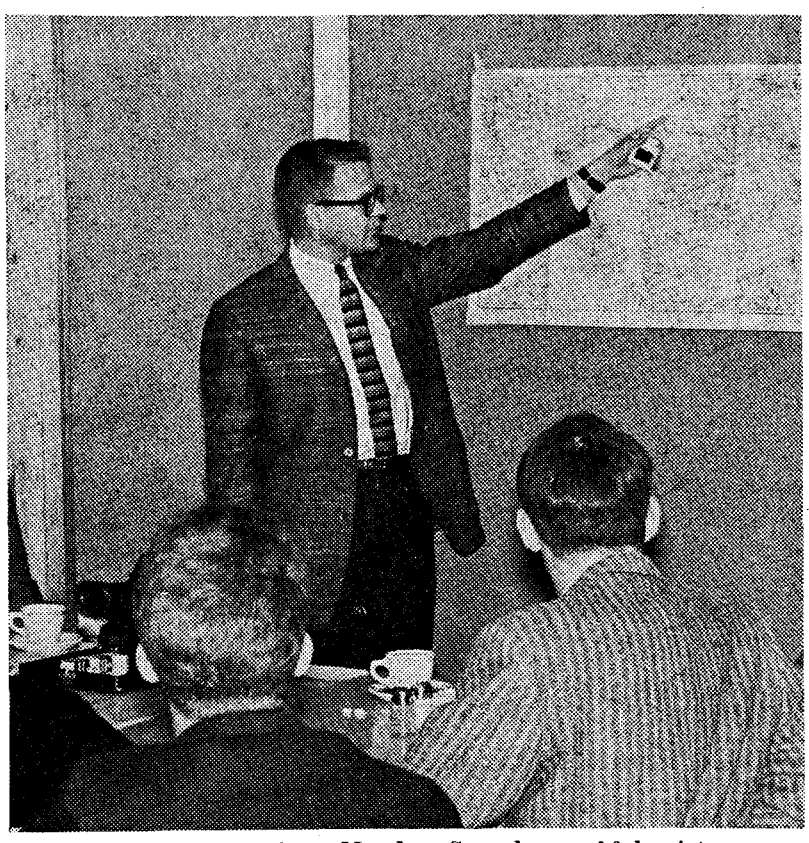
Dr. Jerome B. Wiesner, MIT professor of electrical engineering, will lecture on "The Development of a Stable Defense System," tomorrow afternoon in Dabney Lounge. The 1 o'clock lecture will be the second this term in the Carnegie series on science and government.

Wiesner is director of MIT's Research Laboratory of Electronics. He has been a member of the MIT faculty since 1946. During World War II, he worked on the Cambridge radar development program and the Los Alamos A-bomb project.

His work with weapons and countermeasures led him to a deep interest in arms control. He has participated in six of the Geneva disarmament conferences, primarily in a semi-technical role. He was a member of the President's Science Advisory Committee from 1957 through 1959.

Wiesner arrives on campus today to meet his son Steven, a Caltech frosh. The regular faculty seminar will be held directly following the lecture.

Dupree Characterizes Afghanistan As Economic Korea Of Cold War



Louis Dupree Gives Monday Speech on Afghanistan

BY MATT COUCH

Dr. Louis Dupree, member of the American Universities Field Staff (AUFS) currently visiting Tech to report on a year of study in 9gfhanistan, has characterized this Central Asian country's role in the Cold War as a sort of "economic Korea. Both the free world and the Communist bloc have given substantial economic aid to Afghanistan in the past 10 years, but Depree indicates that Russian aid has served a very special purpose.

Since their first grant of aid to Afghanistan in 1953, Depree feels that Russians have considered that country as an experimental zone to be used to learn techniques of economic penetration for application elsewhere in the world. In addition, the fact that neutral Afgranistan has welcomed U.S. aid has provided an opportunity for the Russians to study our operations and see how far we would go in economic competition with them. If the U.S. and other Western countries back out in Afghanistan the Russians may inevitably fill the vacuum and help establish a pattern for other underdeveloped areas in Asia, Africa, and South America.

In his recent communications to the AUFS Reports Service, Dupree has defended two theses which he states are currently unpopular in the Western and Pakistani press (1) Afghanistan is not a communist country, nor is it controlled by the Soviet Union; (2) Afghanistan will not go communist, unless conquered by force.

There are many hopeful signs from the Western point of view. The leaders of Afghanistan have good, realistic aims, and have set out to implement them in a five-year plan, to end in 1961. The five-year plan calls for a start towards ending the almost complete illiteracy of Afghaniston, improving communications and transportation, establishing an administrative system and civil service, increasing use of land, and a start toward self-sufficiency in expensive commodities such as oil and cement.

It is important to note that though Afghanistan has accepted aid from the U.S.S.R. to build bridges and roads, and to equip their army, they are accepting U.S. help in the fields of education and administration. They asked twice for U.S. military aid, and were turned down, before they accepted Russian arms. It is also significent that most of the educated people in Afghanistan went to school in the West.

The Afghans have adopted a very frank policy in the Cold

(Continued on page 4)

Proposal Sketched For 300 Bev Synchrotron

....Dr. Matthew Sands, Caltech physicist, announced Thursday in a physics research conference that a proposed 300 Bev proton synchrotron is not only useful but is also feasible. The only drawback is the cost, which would be $100-$150 million.

The synchrotron, although not officially being planned yet, would be finished by 1970. Caltech, SC, UCLA, UCB, and La Joyla are among the universities that have been discussing the possibilities for building the machine. If it is built, it would be a national project, as the size and cost are too great for any one university.

Because of the great energies developed by the particles, the radius of the circular machine would have to be 1 kilometer. The aperture, which is the area in which particles travel, would be elliptical, with major axis 5 centimeters and minor axis 1.5 centimeters.

In order to inject particles into the synchrotron a Van de Graaff generator would accelerate the particles to 10-15 Mev, inject them into a synchrontron that would bring them up to 10 Bev, and finally this would inject them into the 300 Bev machine.

The machine has several advantages over other synchrotrons. It would produce about 10 trillion particles per second, which is a fairly high value. The Russian 10 Bev produces only 10 million.

At present there are two 30 Bev synchrotrons, one in Cern, Switzerland; the other at Brookhaven Laboratories, New York. The largest planned accelerator is about 70 Bev.

The machine's advantage lies in the fact that its ability to accelerate particles to 300 Bev represents a 10-fold increase over existing machines, although only 4-fold in energy available for reaction. This would open up an

(Continued on page 8)

Osgood Says Insecurity Is Chief Cause Of Cold War Tension

BY BARRY GORDON

The first comprehensive approach toward ending the arms race offered in a Carnegie lecture was presented by Charles E. Osgood, professor of psychology at the Univeresity of Illinois, last Thursday afternoon in Dabney Lounge.

Osgood maintains that the major problem in the cold war is international tension caused by a mutual feeling of insecurity.

Osgood proposed a deliberate peace offensive designed to induce reciprocation by the Communist block. It is an offensive in deeds rather than words, with each deed designed to reduce international tension. The goal would be to obtain an atmosphere of trust, thereby reducing the danger of cataclysmic war and facilitating East-West negotiations on arms control.

To be effective and "safe," these tension-reducing acts must be graduated in risk, unpredictable by the opponent, and highly diversified in nature. Of course, wide publicity must be given to each step previous to its enactment. The power of these unilateral actions lies in the fact that they are not isolated attempts at seizing initiative, but part of a carefully planned sequence which extends over a considerable length of time.

Of course, the program would first be greeted with cries of "Propaganda!" and "Cold War Tricks!" However, the program would continue regardless of response. With each new and increasingly important act, unfavorable propaganda would appear more and more ridiculous, until the opponent is forced to reciprocate in turn.

Osgood stressed that his program is not one of weakness or concession. He emphasized the necessity of maintaining a firm policy in all areas, including retention of a strong nuclear deterrent force.

He ended the lecture leaving his audience wondering whether any definite acts for his program could be proposed. To many people's surprise, he answered that question in the faculty seminar, following with very specific examples. He offered a hypothetical sequence of steps as an illustration of the type of acts that might be used. With the announcement of each act, reciprocation is invited. Some of his proposals were:

(1) Make public all medical information concerning man in space.

(2) Lift all discriminatory trade and travel restrictions on Red China.

(3) Move the seating of Red China in the U.N.

(4) Offer student exchanges in proportion to the populations of the countries involved.

(5) Make the D.E.W. line bidirectional (warning of our flights toward Russia as well as vice versa) and invite the Russians to "plug in."

(6) Invite the Russians to prepare programs on world affairs which will appear uncensored in our mass media.

(7) Allow all launchings of outer space flights to be monitered by U.N. observers.

(Continued on Page 2)

BOD Vacancies, Frosh Offices Up For Grabs

Students interested in the BOD vacancies and freshman class offices should apply for these offices no later than this Monday, January 16, for the Tuesday, January 17, elections. Those interested in running should apply to any board member.

The BOD offices up for grabs are Athletic Manager and Representative at Large. Freshman class officers to be elected are two BOC members, president, vice-president, secretahry, treasurer, and athletic manager. Both the election for BOD vacancies and freshman officers will be held on the same day.

Editorial

BOD Shirks Job

The situation regarding the delay on atheletic awards for the fall sports has become almost unbearable. In typical administrative hogwash, the BOD has pawned the straightening out of the awards delay upon an athletic manager soon to be elected and sacrificed to the gods of the Whiting Awards Co.

When Bob Juola, the previous athletic manager, ordered the awards, everything seemed to be in order, even though they did not get here in time for the fall sports banquet.

However, some 6 weeks have elapsed since that time, and no Board member individually—or the group as a whole—has felt the responsibility of office enough to straighten out the mess; the six hundred dollar bill for last term's awards is waiting to be paid, yet no board member indicated a willingness to find out where the awards are before the bill is to be paid.

The board last Monday collectively decided to slide the whole matter off on the soon-to-be-elected athletic manager (see page 1). ..It is clear to us, though, the athletic manager will take at least two weeks to even feel at home among a strange group of rulers, and thus as far as satisfying the 80 fall term athletes, nothing will be done for some three weeks.

Too many times we've seen executive officers shirk responsibility in the closing days of their offices. We understand their feelings, having worked with and on the BOD, but the elected directors have no right to fall down on the job. As far as we're concerned, there is no reason for the slip-shod handling of the awards program that still continues.

So if you see your friendly, incompetent BOD member, pressure him a little. He wants to forget you asked him to work for you by voting for him. —tt

Adviser Advice

The recent investigations of the adviser system (see story, page 1) show that the faculty has thought of spending a little time to offer students extra-curricular help in moving toward the careers they feel motivated to. For this we should be grateful. Also, except for isolated cases, students feel they are getting some worthwhile advice.

However, students and faculty alike feel that the possibilities of the system are many times greater than current practice. Students find it difficult to express what kind of professional advice they want and thus the adviser feels he doesn't know where to start. Many advisers have emphasized that counseling in personal problems is more properly the job of the deans. There is a faculty reluctance to worry about students who have not found Caltech motivating, preferring to encourage those who are motivated. However, advisers seem to recognize that personal problems definitely influence academic work.

As a start, we would like to encourage adviser and student alike to worry a little less about who should take what initiative and what areas are fit to discuss with whom and just talk about anything that interests them. Perhaps the best future direction of the adviser system is not something to be decided by the two groups sitting at opposite ends of the campus, trying to outguess each other, but rather by discovering through conversations what the student needs to know and what the adviser has to offer. —jt

Parking Lot Thefts

The letter from Sam Suitt and Jim Blackmon regarding the thefts of auto parts from student cars parked in the Chester and T.P. lots deserves more notice than it got at the term's end.

This letter was one of justified complaint and at the same time a plea for some reasonable action to be taken to protect student property. The action requested was first, that the lighting so often talked about for the two parking lots be installed quickly, and secondly that additional surveillance for the parking areas be provided by more frequent guard appearances.

We talked with Institute officials at the end of the term and, in the light of the Suitt-Blackmon letter, they agreed that inasmuch as the money for additional lighting had been appropriated, the Institute would begin work immediately on the lighting project. This they have done; the lighting in the Chester lot is considerably improved, and work is under way in T.P.

However, additional surveillance of the parking areas would result in an annual increase in operating costs, which at present the Institute is unable to bear.

Should the theft problem continue, further steps to halt it will have to be taken. In order that we know the effectiveness of the new lighting in decreasing the crime incidence, it is imperative that all thefts which occur be reported to Mr. Hertenstein of the Physical Plant Department. From this, it will be possible to decide if additional worrying about the situation is warranted, and what action might be taken.

Carnegie Series Seminar Meets

Every 2 p.m., following the weekly Carnegie lecture, a select group of about 30 faculty members shuffles quietly into 168 Church to discuss and seek answers to the arms race problem. The people entering this soft-chaired room represent a wide variety of backgrounds, including the over-all skepticism of Dr. Feynman, the well-thought-out statements of Dr. DuBridge and the vast amount of experience in policy formation by other members of our faculty.

Undergraduates are able to attend these seminars by participating in the Carnegie discussion group which sits in the Y Lounge following the seminars. Three undergraduates are selected from the group to attend the seminar and report back.

We at Caltech are extremely lucky to have such prominent men come to campus weekly to discuss one of the most important problems of our time. Any student desiring to join this seminar group should contact Bob Ross in Page.

Osgood On Insecurity

(Continued from Page 1)

(8) Turn over Quemoy and Matsu to Red China while emphasizing our commitment to Taiwan.

Probably the greatest problem with such a "radical" proposal is the political difficulties involved in our government carrying it out. Osgood is rather optimistic about this, pointing out the great flexibility af American public opinion in foreign affairs. As proof he cited his own research showing that during World War II, in the space of a few months we came to think of the Russians as much more kind, noble, fair, and even more Christian.

Osgood's unusual approach seems to be worthy of more response than complacent dismissal or short-lived curiousity. If you are interested in studying it further, see his paper entitled "Graduated Reciprocation in Tension Reduction," available in the Public Affairs room.

California Tech

Published weekly during the school year by the Associated Students of the California Institute of Technology, Incorporated.

Editors
Tom Tisch, John Todoroff

Managing Editors
Lance Taylor and Roger Noll

Editorial Staff
Craig Bolon, Dan Entingh, Larry Gershwin, Bob Greenwald, David Helfman, Richard Karp, Chuck Leonard, Butch Lungershausen, Bill Meisel, Barry Petersen

Business Staff
Cleve Moler, Manager
Circulation Manager: Howard Monell

The California Tech, 1201 East California Blvd., Pasadena, California.
Member of The Associated Collegiate Press
Second Class postage paid at Pasadena, California
Printed by Bickley Printing Co.
Represented nationally by National Advertising Service, Inc.
Subscriptions: $1 00 per term, $3.00 per year. Write: Circulation Manager.

Rotation Agen. Sets Hearing

The House presidents set a general agenda for formulating their rotation recommendation at Monday's IHC meeting.

Their plans include an invitation to all students who feel strongly enlightened on the procedures of assigning frosh to Houses and the effects of such procedures on Tech and Techmen to present ideas. The student opinions will be sought in an open meeting planned for about February 1.

Faculty and resident associates will be invited to offer advice and opinions at an early meeting. The ASCIT ExComm is expected to publish the results of its rotation study next week.

Finally the presidents will formulate several proposals to report to the students for poll.

The IHC hopes to sum it all up in a student recommendation to the faculty Student House Committee about February 20.

Congratulations

Best wishes and a spot 'o congrats to Marcia Northrop, just chosen president of the Delta Gamma sorority at the University of California — the first sophomore president in 16 years —and the best president ever!

Poll Checks Advisers

(Continued from page 1)

undergraduates, however, and find it particularly hard to please.

From the committee findings, the faculty looks upon the adviser system as an opportunity for the student to receive professional guidance in his field—to find out what type of work he can do and how to prepare himself for it.

All feel that signing the orange card is of relatively minor significance.

The initiative to do this is expected to lie with the students. Numerous faculty mentioned strong dissatisfaction with the apparent disinterest or shyness on the part of their advisees.

The faculty is not too worried about the adviser's knowledge of specific Caltech courses. Rather, once the student has found out from the instructor what a course teaches he is to be able to ask the adviser of what value this material would be in his field.

Most see the adviser relationship furnishing at least one source for grad school recommendation letters.

Companies Seek Interviews With Budding Engineers And Scientists

The first list of companies to interview at Caltech for summer and permanent work is now out. For your convenience, the companies and the degrees necessary to obtain work with them will be published weekly in the Tech. There is a master schedule in the bulletin board across from the Placement Office in Throop Hall, and personal copies of the interview schedule are yours for the asking in the office.

Those people who want to talk to companies about work must sign up in the Placement Office; there you can obtain information regarding time, place, and nature of the interview, whether of group or individual.

January 16:

U.S. Air Fore Flight Test Center — BS, MS, PhD/ChE, ME, EE, Ae.

General Motors Corporation — BS, MS, PhD/EE, ME, Ma, Ph, Ch, CE.

Minnesota Mining & Manufacturing Co. — BS, MS, PhD/Ph, Ch.

Kaiser Aluminum & Chemical Corp., — BS, MS/Ch, EE, ME.

Moffatt & Nichol, Engineers—BS, MS/CE, ME, EE.

January 17:

General Motors Corp. — BS, MS, PhD/EE, ME, Ma, Ph, Ch, CE.

Hewlett-Packard Co.—BS, MS/ME, Ph, EE, PhD/EE.

International Business Machines Corp. — BS, MS, PhD/Eng., Ma, Ph, Ch, Ay, EE, Ge.

United States Department of Comm. Coast & Geodetic Survery — BS/CE, EE, Ge, Ph, Ma, Ay.

January 18:

General Motors — BS, MS, PhD/EE, ME, Ma, Ph, Ch, CE.

International Business Machines — BS, MS, PhD/Eng., Ma, Ph, Ch, Ay, EE, Ge.

Perkin Electronic Corp. — BS/EE.

January 19:

Lockheed Aircraft Corp. (Missiles & Space Div.)—BS, MS,

(Continued on page 6)

New opportunities for engineers.

Y Winter Calendar Schedules Films, Speakers, Theologians

BY LANCE TAYLOR

The YMCA's winter quarter program starts this Sunday evening with a showing of "The Titfield Thunderbolt," as a first installment in an enormous series of cultural, entertainment and other programs.

Among the other programs are diners' clubs, visiting seminary students, a finance drive, a Carnegie speakers' seminar club, some special speakers, some student-faculty firesides and an enlightening, co-educational conference with the University of Southern California YWCA.

According to Y President Bob Nason, all of these programs need planning, organization and stamp-licking so volunteers and inquiries will be gladly accepted in the Y office.

THE FILM SERIES

The YMCA film series this term will feature four movies, each of which will be presented on Sunday evenings in Culbertson. Admission to each film is 65 cents . Season tickets can be had for $1.50.

This Sunday's movie, the afore-mentioned "Titfield Thunderbolt," is a comedy about the struggle of an old-time single track railroad and some railfans against nationalization. Since it's a British comedy, it's funny.

The "Thunderbolt" will be followed by "The Brothers Karamazov," "Skanderberg," and "Alexander Nevsky" at approximately two-week intervals. The first film is self-evident, the second one is about a revolt of the Albanians against the Turks in the 15th century, and the third is directed by Eisenstein with background music by Prokofiev.

THE DINERS' CLUBS

The YMCA Diners' Clubs operate on the proposition that students like to miss Student House meals and hear good speakers. They try to fill both needs.

This term the upperclass diners' club will feature speakers from AUFS who will talk about various remote but important countries all over the world. In addition, as yet unnamed other speakers will be on hand. This club meets on Monday evenings.

The frosh diners' club will operate similarily to its uppeerclass counterpart with meetings on Tuesday evenings. The callow frosh will be confronted with various speakers — mostly from the Caltech community — who will describe life.

Meals at both clubs are free to members of the Student Houses. Chandler Dining Hall food is better than House food.

Starting February 14, eight seminary students will be on campus for four or five days to engage in bull sessions with Techmen. Seven of the students will stay in each of seven Houses —doubling with students. The eighth, who has the added advantage of being a girl, will stay in the Athenaeum.

Two of the seminarians, including the girl, are at a Jewish school, one is a fundamentalist, and the other five are liberal Protestants.

While here, the seminarians will engage in many discussions with atheistic (and other) Caltech students. They may also give a speech or so, and will probably attend Hunter Mead's PI 101 cours on History of Thought.

CALTECH AND SC

Also on the agenda will be a Y offic.e co-educational conference with the SC YWCA. Theme of the conference will be "The Sleep of Prisoners," which is a symbolist play by Christopher Fry. The conferees will listen to the play being read, and then discuss it. They will also hike, play, and so on in the mountains where the conference will be held.

It is scheduled for the week end of February 25.

AND SO ON

In addition, the Y is in charge of the Carnegie series seminar. This is a group of students who rotate members into the faculty seminars with Carnegie speakers. Every so often, all the students get together to discuss what they have heard. For more information, see the

U.S., Russia Vie In Programs Of Assistance To Afghanistan

(Continued from Page 1)

War through the attitude of their leaders, the most important of which at the present time is Prime Minister Mohammed Daud. Recognizing their traditional role as a buffer state between what is now the Communist and non-Communist world, they have decided to bring both power blocs into Afghanistan and get what they can from both.

Certainly the Russians have shown a willingness to compete in Afghanistan, and they point to their non-interference in internal affairs as an example of their peaceful aspirations. The U.S. attitude is not too clear at present, though we still have considerable prestige in the area.

The Afghan attitude is clearly something of a gamble on their part, but they feel safe, states Dupree, as long as the U.S. remains there and they are not left depending on just one power bloc. The Russians have not tried to subvert the Agfhan goverenment and probably won't as long as the government remains neutral and provides them with an example of their "peaceful coexistence" policy.

Dupree graduated in 1950 from Harvard University, which also awarded him the M.A. degree in 1953, and the Ph.D. in 1954. Among his published works are four monographs and over 50 articles and reviews.

Dupree will be on campus until next Wednesday, January 18.

Totem Needs Writers, Poets

Attention all writers, poets, photographers, artists, and cartoonists. The wheels have been set in motion and TOTEM is gathering itself together to launch a new issue in the spring. There will be a meeting of prospective contributors today at 5 p.m. in Dabney Lounge.

If you have any thoughts about submitting one of your creations, now is the time to let the staff know about it. The deaedline has been set for February 4. All manuscripts should be turned in to Dave Benson or put into the B box in Blacker. In case anyone did not get his copy of TOTEM'S fall issue, Dave has a few extra copies in 236 Spalding.

Faculty Sadists, Not Bad Eyes, Cause Problems

Most every Caltech bull session is at some point turned to discussing the "typical Techman" in all his glory. All of us have pet theories as to what best typifies Joe Tech (as opposed to Joe College and Oliver Cool), but it has until now remained for a truly incisive study of Caltech students to be released to the jaundiced public view. With neither undue modesty nor conceit, we submit that at long last the Caltech man has been successfully and competently categorized.

The first major distinguishing feature of Joe Tech is that he wears glasses. A recent survey showed that 97 per cent of the Caltech student body uses some sort of optical device. To the untrained observer, this might seem to be a result of the fact that 97 per cent of the Caltech student body suffers from impaired eyesight. Not so. A Techman is very sensitive to the whims and fancies of the general public, and for years the general public has harbored the belief that the typical Techman should wear glasses. Not wanting to appear atypical or out of place, 20-20 Caltech students make certain they own at least three pairs of glasses. Actually, Caltech students have excellent eyesight — over 80 per cent can tell an Oxy girl from a Scrippsie at 200 yards.

Another common belief is that most Caltech students are miserable athletes, but this, too, is a common unwise generalization by the hasty generalizer. The average Caltech student is not a miserable athlete, but because he is so conscious of the feelings of others, he always lets the other fellow win. This becomes difficult when his opponent, another Caltech student, is doing the same for him. The result is a seeming travesty of athletics, but the purpose is rather admirable.

A common denominator of all Caltech bull sessions is a discussion of the fact that Caltech is ideally suited for the typical Caltech student, but for really "neat guys" (like those participating in the bull session) the Caltech atmosphere is an anathema. Bull sessionists who make such claims are clearly guilty of misunderstanding and maladjustment.

The fact of the matter is that the typical Caltech student feels that the school was made for some person other than himself, that other person being his erroneous conception of the typical Caltech student. This is all very confusing until one realizes the philosophy of the Institute in regard to the treatment of students and the establishment of Institute policies relating to students.

While most casual observers believe the Institute to be run by idealistic scientists and educators, it is really the trysting place of the major portion of the world's sadists. Their purpose is to make life miserable for the well-adjusted, all-American type student by (1) thwarting his natural inclination to enjoy life and do well, and (2) frustrating him by rewarding obviously inferior people with better grades, solid job and grad school recommendations, and greater countenance.

This satisfies the sadistic tendencies of the Caltech administration and faculty, and allows them to get one last kick at the people that are clearly superior. It thus becomes obvious that Caltech was meant for the people who cannot possibly adjust to it, for these are the people that that Institute personnel are out to get.

This closely ties in with the popular conception that Caltech students have a genius for science and related fields. The Institute tries to establish this image by publishing the College Board scores of each freshman class, emphasizing the excellent scores they supposedly achieve in math, physics and chemistry.

But the truth of the matter is that the scores the Institute publishes are all phony. Actually, over 90 per cent of this year's freshmen received scores of under 500 in Advanced Math. What's more, more than half eaerned an 800 on both the morning and afternoon English tests.

The plot of the Institute becomes diabolically clear. The Admissions Committee cleverly selects those students who have no ability in science, but who did well enough in high school to think they liked the field, and then admits them to the torture chamber.

They snow them with as much advanced science as possible, and then watch them shrink back when their obvious lack of ability fails them. To make it worse for this group of poorly placed students, they then admit a few students who have good abilities in the scientific fields, but who have some major character flaw that is plainly evident to everyone.

We now have a clear picture of the typical Techman. He is a mistreated, tortured, yet basically very admirable young man who really should be studying English Literature at Harvard.

Frank W. Davis

BOD, IHC In Water Fight

Joel Donnelly, IHC president, and Bill Bauer, BOD president, announced simultaneously yesterday that the annual BOD-IHC water-fight will be held a week from Saturday, on January 21, at 1130 a.m. on the Athanaeum lawn.

The announcement was made at a special press conference held at the Alles Veranda. The officers announced that students interested in viewing the debacle should be at the Athanaeum lawn by 11:25 on Saturday morning.

Davis, Class of '35, Named All America

Frank W. Davis, Class of '35, has been named a Sports Illustrated Silver Anniversary All-America winner. Davis was nominated by Caltech and selected on the basis of his record in the 25 years since he played college football.

He lettered in football here for three years; in his junior and senior years he was captain of the team. Twice he won the Wheaeton trophy for sportsmanship, moral influence, and scholarship.

His activities were not restricted to athletics. He was president of his freshman class, president of the Beavers and Varsity Club, and Board of Control member.

Davis is now vice president of the Fort Worth Division of Convair in his home state of Texas. While with Convair, he has been largely responsible for such projects as the first turboprop plane, the first delta wing, the first vertical take-off plane, and the B-58 supersonic bomber.

Outside of his profession, he has contributed his time to a large number of organizations. He is directtor of the YMCA, Metropalitan branch; director of the Texas Law Enforcement Association, chairman of the Fort Worth Division of the Caltech Development Program, and officer or member of over 17 other groups.

Of the Silver Anniversary winner Sports Illustrated says: "Their lives bear out their opinions. Almost every one of them gives far more of himself to his profession and to a staggering variety of community service, than he gets back in money or honors. In an age characterized by Operators and Status Seekers they are a select group indeed."

Mossbauer Receives Award For Discovery Of Radiation Effect

Selection of Dr. Rudolf L. Mossbauer, a gifted young physicist, to receive the 1960 Research Corporation Award, has been announced by Caltech and the Research Corporation, a science foundation.

The 31-year-old Caltech research fellow in physics was cited for discovering a radiation effect that now bears his name. The "Mossbauer effect" is described as offering "tremendous potentialities for achieving new insights into the age-old problem of the nature of the world that man inhabits." It is, essentially, a wonderfully accurate yardstick that enables physicists to measure precisely, for the first time, the effects of natural forces such as gravity, electricity, and magnetism, on very small particles, such as photons and parts of the nuclei of atoms.

What Dr. Mossbauer has done is to find a way to produce and detect gamma rays whose wavelengths are extremely sharply defined. If this radiation could serve as an atomic pendulum, the resulting clock would be accurate to more than one second every 3,000,000 years.

The "Mossbauer effect" enables physicists to test phases of Einstein's theory of relativity. Already the effect has confirmed Einstein's prediction that gravity can change the frequency of a light beam. And it is being used in laboratories in this country, Europe, and Russia to resolve mysteries in the exciting fields of solid state physics and nuclear physics.

At Caltech, Dr. Mossbauer and his colleagues are using his effect in the study of the hitherto little known internal magnetic and electric fields in isotopes of the rare earth elements. They are obtaining information about the complex electrical interactions in the crystalline structure of these compounds and about the electric and magnetic properties of excited nuclear states. This research is supported by the Atomic Energy Commission.

The Research Corporation Award, first given in 1925, honors men of science who have made outstanding contributions. Eight of the 24 previous recipients later have been honored with Nobel prizes. The award consists of a plaque, a citation and a $5,000 honorarium. Research Corporation is a science foundation with headquarters in New York City, created in 1912 by Frederick Gardner Cottrell, a noted inventor, scientist and teacher. Cottrell contributed the

(Continued on page 8)

Bonner Attends Rubber Confab

The busy rubber tree, which has been coaxed into increasing its yield five-fold in the past 20 years, soon will be induced to double its current output, a Caltech biologist said.

Dr. James F. Bonner has returned from Kuala Lumpur, Malaya, where he addressed the first world-wide conference on rubber. There he described the steps by which one of nature's most efficient chemical factories, the rubber tree, transforms carbon dioxide and hydrogen into long hydrocarbon molecules of liquid latex. In 12 years of research at Caltech, Dr. Bonner and his associates have helped discover how this is done.

Production of the milky white latex has been increased by painting hormones or antibiotics on the tree trunk and by using different methods of tapping the special set of natural "pipes" in the bark of the tree, the biologist said.

It was the consensus of the 300 scientists from all over the world who attended the conference, sponsored by the Rubber Research Institute of Malaya, that demands for the product are increasing so rapidly that there will be a need for the natural rubber industry for a long time, Dr. Bonner added. Malaya is the world's largest producer of natural rubber.

"While in the United States the synthetic product is most widely used—because it is cheaper here — two-thirds of the world's production is from the natural sources. Synthetic rubber is virtually identical with the natural product, and is made from petroleum hydrocarbons," the biologist said.

The United States developed synthetic rubber when its natural supplies were cut off in World War II. Dr. Bonner helped establish the guayule plant program which served as a stopgap until the artificial synthesis of rubber was achieved.

The guayule rubber plant was grown in California, Arizona and Texas. Its advantage over the rubber tree was that its product could be harvested mechanically. However, its product cannot compete during peace-time production of either the natural or synthetic product.

In his six-week trip, Dr. Bonner visited Tokyo, Japan (where he gave talks at the University of Tokyo and found biochemistry laboratories there fully up to American standards), Hong Kong, Bangkok, Singapore which has a special harbor for hundreds of boats that smuggle rubber out of Indonesia), and Bugor, Indonesia, where he addressed the University of Indonesia (whose courses and textbooks all are in English and which is supported by the United States). Dr. Bonner also visited the Indonesian Academy, which he described as the Caltech of Indonesia.

In Australia he inspected a new method of growing rice and predicted it would succeed. He also saw Alice Springs, "the Tucson of Australia," which has imported palo verde trees from Arizona. And he saw the first date grove in Australia, which is modeled after similar groves in India, Calif.

Arrange To Interview Now

(Continued from page 3)

PhD/Ae, ME, EE, Ma, Ph, Ch.

Motorola, Inc. — BS, MS/EE, Ph.

Pratt & Whitney Aircraft — BS, MS, PhD/Ph, ME, Ae; BS/Ma, Ch; PhD/EE, MS, PhD/ChE; BS, MS/Met.

Varian & Associates—BS, MS, PhD/EE, ChE, Ph; BS, MS/ME.

January 20:

Lockheed Aircraft Corp (Missile Division)—BS, MS, PhD/Ae, ME, EE, Ma, Ph, Ch.

Anaconda Wire & Cable So.—BS/EE, ME, ChE.

Jet Propulsion Laboratory — BS, MS, PhD/Ae, EE, ME, Ch, Ph, CE.

January 23—Summer:

Borg-Warner Controls — BS, MS/EE, Ph.

John Fluke Mfg. Co., Inc. — BS/Engineering; Summer — Jr./Engineering.

General Foods Corp.—BS/ChE, ME.

Stauffer Chemical Co. — BS, MS, PhD/Ch, ChE, ME, EE.

January 24:

Applied Research Labs., Inc.—BS/EE, ME, Ph.

Borg-Warner Controls — BS, MS/EE, Ph.

Chance Vought Aircraft, Inc.—BS, MS, PhD/Ma, ME, Ae, EE, CE, Ph.

Minneapolis-Honeywell — BS, MS, PhD/EE, ME, Ph; MS, PhD/Ch, Ma.

Standard Oil Co. of California —BS, MS, PhD/Ch, ChE, Ma; BS, MS/ME, CE; PhD/Ph.

SPORTS

Redlands Trounces Tech 79-65 In Loop Opener

Caltech's varsity basketballers split a pair of games over the week end, and then lost to league powerhouse Redlands Tuesday night. These contests left the Beavers with a 2-4 record going into tomorrow night's tussle with Pomona, whom the Beavers hope to make the league doormats.

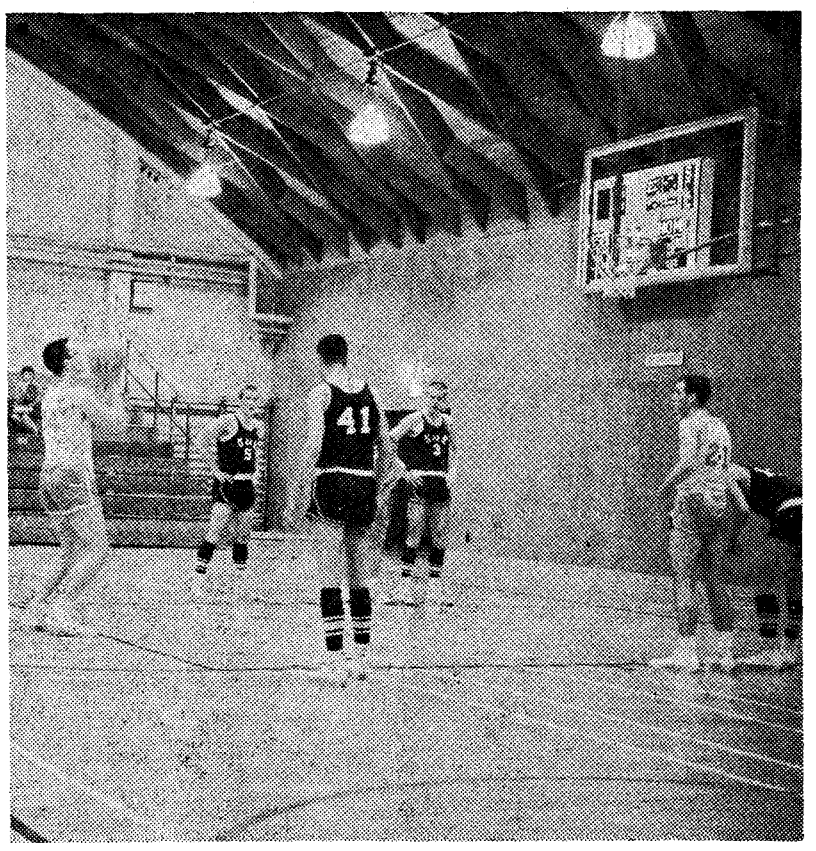
L.A. Pacific fell victim to the biggest Beaver uprising in history on Friday as the local varsity trounced the Crusaders 102-50. The victory margin was the greatest on the Caltech record books, while total score was the second highest. Six Techmen scored in double figures, led by Gerry Clough with 17 counters. With the rather good-sized crowd in a hush, center Roger Noll calmly tossed in both free throws on a one-and-one suitation to put the Beaver score at 100 with less than a minute to play. Tom Bopp then connected with a long set shot to put the Beavers over the century mark.

The Beavers lost a heartbreaker to UCR Saturday night, 66-63. With 1:27 left, Caltech clung to a three-point lead, but the long Christmas vacation layoff took too much out of the players, while a conditioned Riverside team stole the game in the waning seconds. Top scorer for the Beavers was Noll with 19 points. Bopp and Noll combined to snag 41 rebounds between them in the losing cause with 21 and 20, respectively.

Caltech lost its first league game, 79-55, to the University of Redlands. Returning center Jack Schroeder led his team to the easy win. Caltech managed to stay even throughout the first quarter, but then the Bulldogs' size and speed proved too much for the Beavers. All things considered, though, Caltech played a very good game. Tom Bopp looked very good at forward, and lead the team with 16 points.

Friday the Beavers travel to Pomona to attempt to pick up their first conference win. Pomona lost by 20 points to Claremont, so the Beavers had better win this one if they hope to finish high in the conference. The Sagehens don't have much this year, and should have no trouble going through their league schedule without a win. But they could be dangerous on their home court. Traditionally Caltech-Pomona games are close, with the last three being settled by one point.

Tuesday the Beavers host powerful Orange Coast at 4:15. Although this is their first year in varsity competition, the Orangemen have managed to beat most of the small college powers of the area, such as Cal Western and Whittier. They lost to L.A. State by just a few points. This might be a long afternoon for the Beavers.



Roger Noll shoots free throw during last Tuesday's basket ball game with Redlands. Larry Brown (21) looks on.

Arndt Named As All Star

Caltech's John Arndt was named to the All-District Three NAIA second term for his fine performance for the Beaver football team. Arndt, who was the nation's fourth best small college pass catcher, was previously picked on the first team All-SCIAC. Arndt, a junior, becomes the first Caltech man to receive such an honor in several years.

This Is Your Life, Bert Kloosterman

BY LANCE TAYLOR

Bert Kloosterman is a campus guard. He is married, about 60, and walks 13 miles each night for six night a week in defense of Caltech's life, property and sacred interests. Mainly he checks time clocks.

In the course of a year, he wears out exactly one pair of J. C. Penny $15 work shoes.

I talked to Kloosterman on one of his hourly rounds the other night. By pocket pedometer, I decided we walked 1.2 miles, plus a stint in his car. In that time we (he) check five time clocks, tried 53 doors and found nary a prowler.

SEVEN REPORTS

We (he) also drank a cup of coffee, and filled out seven reports reading (roughly), "I, Bert Kloosterman, did check the doors, cans, and time clocks in Spalding, Thomas, Central Engineering and the Athletic Center between the hours of 9 and 10 p.m."

Kloosterman and his compatriots — there are seven of them, including Officer Newton—make their rounds every hour, on the hour, night and day, rain or shine, etc. Except during the day, when Newton reigns, there are two guards on campus—one covering the area west of Throop Hall, and one the area east. They are busy, gave Kloosterman, most of the time.

INTERESTING TRIP

In the course of my trip around campus with Kloosterman, I found out many interesting things while I observed him on his duty. I also got tired feet.

I found out, for example, that there is a time clock in practically every fan room on campus, including one below Throop Hall and one in a penthouse on top of Spalding. (You get a nice view of campus from the fan room of Spalding — which is why the insurance company had a time clock put there. Insurance companies seem to have the big voice in placing time clocks.)

I also found out that the ladies' rest room on the second floor of Spalding is the most tastefully appointed room on campus. It has two chaise lounges and two very padded overstuffed chairs. It also has a well-stocked magazine rack. It pays to be a secretary in Spalding.

(Before he entered the rest room — avidly trailed by me — Mr. Kloosterman tastefully called out, "Guard. Lights," in his pleasant tenor voice.)

Kloosterman's rounds are covered by his omnipresent time clocks. Some of them have to be checked every two hours, others every 169 minutes, others once a night, some on alternate Thursdays, and so on. He fits his trips around campus to fit the time clocks. On each trip, he covers about five or six clocks, which means five or six buildings.

On the particular trip I took, we started by traipsing through the basement of Throop, and then took an exciting and noisy trip through the boiler room and the chemical engineering labs.

EMERGENCY

Kloosterman said there were often floods in the chemical engineering labs. This is an emergency. When there is an emergency, campus cops call either the Pasadena police or Mr. Hertenstein, the boss of B&G. I got the impression Mr. Hertenstein is the man to call, as befits his exalted position.

Even though he is a special member of the Pasadena police department, and even though emergencies arise (so he says), Kloosterman does not carry a gun. None of the guards carry anything besides time clocks and flashlights, which make formidable wapons.

SPALDING TO GYM TO . . .

Anyway, after the chemical engineering lab, we went to Spalding, and visited the aforementioned ladies' lounge and fan room. We then went to the E & M shop (anothr time clock), Thomas (yet another time clock), and Central Engineering (guess what).

After that, we went over to T.P., and got into Kloosterman's care to make the long drive to the gym. On the way, we ogled girls playing tennis and went twice around the student parking section in Uleimaee T.P. Klootserman assured me that dashboards are no longer being stolen in the parking lots. I was relieved.

He also told me that Ossifer Newton is the sole parking ticketer. I was even more relieved.

REALLY CHECK

From the parking lot we went to the gym, which Kloosterman checked more carefully than all the other buildings put together. After the gym, we checked the ROTC building, the parking lot again, and the parking lot behind Guggenheim (all with time clocks. Then Kloosterman went clocks). Then Klootserman went

I went home. My feet hurt.

Tennis Next I. H. Sport

As the Interhouse sports race pulls into second term, Ruddock House leads the pack. Actual results are Ruddock, first with 49½ points; Ricketts, second with 45 points; Dabney, third with 43½ points; Lloyd, fourth with 33 points; Page and Fleming tied for fifth with 31½ points each; and Blacker, last with 18 points.

The next sport on the Interhouse calendar is tennis. Tennis wlil consist of three singles matches and one doubles match. The playoffs for tennis, originally scheduled for this and next Sunday, will be held during the week so as not to conflict with week ends (logically enough).

Radio Club To Call Home Towns Sunday

BY LEE MOLHO

Your alley phone may ring next Sunday with your home town on the line — via amateur radio. Another of the many activities of the Caltech Amateur Radio Club, these "phone patches" will be handled by members operating the club station in rotation throughout Sunday. The Radio Club will be contacting "hams" all over the United States for phone calls.

Making "phone patches" is not the only Radio Club service for the general Tech student body. Over 50 messages were put on the air for Techmen last term. Free radiograms may still be sent by dropping them in the Q mailbox in Page, Lloyd, or Ruddock, or the X mailbox in Blacker or Lower Throop.

W6UE is the new permanent station call of the Radio Club. This two-letter call marks the club as an "old-timer", which in fact it is, for a Tech radio club, 6UE, existed in 1926. Along with the new call has come almost a completely new set of equipment. An HQ-170 receiver and Heathkit single sideband equipment (for which ASCIT provided funds), with a loaned Apache transmitter, have made the club station highly versatile and potent.

Mossbauer

(Continued From Page 6)

proceeds from his inventions in the field of electrostatic precipitation to endow a foundation for the further advancement of science. More than 2,500 research scientists have been aided by foundation grants totaling more than $13,000,000.

Dr. Mossbauer currently is on a two-year leave of absence from the Institute of Technical Physics at Munich, Germany. A native of Munich, he was educated in that city and worked for 18 months at the Max Planck Institute for nuclear physics at Heidelberg.

Synchrotron

(Continued from page 1)

entire new field of particle physics, enabling physicists to learn a great deal more about particle interactions and to discover new elementary particles.

Dr. Sands said that, if it is built, "we hope it will be within flying distance of Caltech."