

Architect's drawing of the Archibald B. Young Health Center now under construction.

Construction begins on new student health center

Construction began Monday on the \$200,000 Archibald B. Young Health Center, located on Arden Road next to Tournament Park. The new facilities should be ready for use by September 21, according to Mr. Wesley Hertenstein, head of the Physical Plant department.

NSF awards predoctoral fellowships

Thirty-four Caltech students have been awarded predoctoral fellowships by the National Science Foundation of Washington, D. C. Ten of the students are undergraduates about to enter the first year of graduate school, while the remaining 24 are in their intermediate or terminal years of graduate work.

The ten seniors receiving fellowships are Pete Crawley, Dick Hundley, Peter Jordan, Jacob Lubliner, Howard Marshall, Don Nierlich, Herb Rauch, Stu Richter, Edwin Royce, and Harrison Schmitt.

The fellowships consist of \$12,000 plus tuition and fees for one year's study at any graduate school. The National Science Foundation, a government-supported agency, awarded a total of 845 fellowships to students selected from 3028 applicants.

Mr. Albert B. Ruddock, chairman of Caltech's board of trustees, presided over the formal ground-breaking ceremonies on Wednesday. Also present were Dean E. C. Watson, acting president of the Institute, Deans Paul C. Eaton and Foster Strong, and Dr. Richard Webb, director of health services.

The building, which, appropriately enough, will be built in the shape of a T, is to include four double rooms and two isolation wards, in addition to a kitchen, physiotherapy and X-ray facilities, three treatment rooms, a psychiatrist's office and a large lounge.

The modern, permanent and spacious facilities will replace the present temporary building on the east end of the campus, offering 50 percent more space. Personnel at the new location will remain the same.

Construction costs totaling \$200,000 are being paid by donations of an anonymous contributor and of Mrs. Archibald B. Young in memory of her husband. Pereira and Luckman are the architects; Steed Brothers will handle construction work.

Brief refresher course in Tech honor system

With the opening of a new term, the California Tech again presents a resume of the Caltech honor system, in the belief that the preservation of the Honor System depends on the full and complete understanding of the participants.

The following quotation from the Institute's Policies and Procedures presents one of the best available summaries and also affords an opportunity to observe the attitude of the administration:

"The Honor System at the Institute covers tests, laboratory reports, and homework. It applies to both undergraduate and graduate students. Instructors should always keep in mind that an honor system cannot work unless it has been made perfectly clear to the students how much collaboration, if any, is permitted on laboratory reports and homework. This should be done at the first meeting of each term.

"An instructor should not remain in the room in which he is giving a test or examination. Students may leave the room and return as they please, and it is the responsibility of the students to see that no cheating occurs. Unless the instructor directs otherwise, students may take their examinations in rooms other than those where the papers are distributed; but taking examinations in the Humanities or Physics libraries is not permitted. It is the responsibility of the student to return his paper to the scheduled room at the announced time of ending the examination, and that of the instructor to be there to collect all papers.

"Administration of the honor system is in the hands of the student Board of Control, and any violation of the honor system which comes to the attention of an instructor should be reported to the Chairman of the Student Board or to one of the deans. Violations involving graduate students should be reported initially to the Dean of Graduate Studies."

"Doc" Clark writes, teaches, leads

by Howard Welsberg

Job opportunities for graduates of CIT have steadily grown more lush in the past two decades. Whether this is mainly due to changing demand, improved caliber of students, or to the efforts of Donald S. Clark is hard to say.

Genial and cooperative, Clark is proud of his work and justly so. He has been professor of mechanical engineering since 1934, Director of Placements since 1935 and secretary of the alumni association since 1946. An alumnus of Caltech himself, he has been Resident Associate of Dabney House, editor of Engineering and Science, president of the Alumni Association, active in World War II ordnance projects, and is currently president of the A.S.M.

Award-winning Research

Not one to be restricted to teaching alone, "Doc" Clark has



D. S. "Doc" Clark

done award-winning research in the dynamic behavior of metals and alloys, and has written two textbooks.

He seems to have spare time, too, and has spent it amassing a collection of rare old microscopes and a library of books and professional magazines on the subject of mechanical engineering (he binds many of these himself, and loans them out in professional library style).

As to what an undergraduate should consider with respect to employment when planning his future, Clark pointed out that what many companies consider most important are the overall characteristics of a man—his ability to cooperate, possible personality difficulties and the like. They also look at his record, just how closely depending on the nature of the work.

(Continued on page 5)

New sex lecture features panels

Sex lectures returned to Tech last night as a group of local physicians and psychiatrists presented a movie and a panel discussion.

Informal discussion groups and a special session of answering sealed questions are the major innovations in the new series. These lectures, organized by Dr. Richard Webb, medical director of the health center, are the first large endeavors in this field since the Caltech YMCA discontinued its program two years ago.

Big T, Tech seek officers

Due to a lack of candidates in the recent election, the offices of Big T Editor and California Tech Business Manager are unfilled. These offices offer a chance to learn the businesses with which they are connected, and are interesting work in themselves. If you are interested, do any one or, preferably, all three of the following: put a note in the K box in Dabney; speak to the present staff on the publication with which your interests lie; and be at the Board of Directors meeting next Monday night at 8:00 o'clock.

There also exists a vacancy for the office of Little T editor.

Houses elect officers for 1957 term

Assuming the responsibilities of office at the end of last term were new house presidents Vince Taylor, Ricketts; John Kleiderer, Dabney; Mike Konrad, Fleming; Don Stern, Blacker; and Dick Cooper, Throop. Joining them at Wednesday's Inter-house Committee Meeting were newly elected veeps Frank Albini, Dave Lange, Don Wiberg, Bob Johnstone, and Jim Wilkinson.

Other house officers for the coming year by houses are:

Dick Baron, social vice-president
Ford Holtzman, secretary
Hugo Fischer, treasurer
Phil Reynolds-Dave Singmaster, athletic managers

Dabney:
Bob Lange-Sol De Picciotto, social vice-presidents
Doug Shakel, secretary
Bud Penquite, treasurer
Doug-Christman-Terry Telgen, athletic managers
Mike Levine, librarian
Dennis Paul, historian
Lou Toth, comptroller

Fleming:
Mike Gray-Bill Graham, social chairmen
Joe Fineman, secretary
Nick Grossman, treasurer
Alan-Emanuel-Mac Poor, athletic managers
Gary Zimmerman, librarian
Blacker:
Ken Dinwiddie-Stu Goff-Walt Johnson, social chairmen
Tom Jovin, secretary
Gus Akselrod, treasurer
Tim Harrington-Bill Kern, athletic managers
Max Oeschger, librarian

Throop:
Bob Calaway-Ed Shuster, social chairmen
Tracy Atherton, secretary
Bob Harmon, treasurer
Jack Petersen, athletic manager

Following last night's movie and discussion, the audience separated into four informal sessions in the student house lounges. Dr. George Mayhew, master of student houses, emphasized that each of these sessions was open to all men, regardless of house allegiance.

During the next week men are urged to submit questions, sealed if desired, to Mayhew's office. Next Thursday the panel will conclude the program with another panel discussion, answering of questions, and further informal discussions.

Participating in this series are Dr. Thomas Dorf, Dr. Karem Monsour, Dr. Warren Jones, Dr. Daniel Siegel, Webb, and Dr. John Weir.

Sex lectures were conducted by the YMCA until 1955, but they consisted entirely of one-man presentations. It is hoped that the new emphasis on audience participation will increase student interest.

Hewitt to talk to math-men

Dr. Edwin Hewitt, professor of mathematics at the University of Washington, will give two lectures for undergraduates at 4:15 p.m. on Monday and Tuesday, April 1 and 2. Topics to be discussed are "What is an Integral?" and "Generalization of Groups."

The first lecture will be on an elementary level, while the second will be of more interest to students with some background in algebra. Tea will be served at 4 p.m. on Tuesday. Dr. Hewitt has emphasized that he will be available April 1 and 2 for informal discussions with students and faculty members on mathematics or any other subject. In particular, he would like to discuss the opportunities available now for professional mathematicians.

Dr. Hewitt's visit is arranged by the Mathematical Association of America, the professional organization of collegiate mathematics teachers. This lecture series, which is in operation throughout the nation, is supported financially by the National Science Foundation. The general aim of the program is to strengthen the mathematics program of colleges and universities by giving interested students an opportunity for personal contact with creative mathematicians from other institutions. This is the first year that Caltech has participated in this program, which has been in operation for three years.

Dr. Hewitt received his Doctor's degree in 1942 from Harvard University. From 1943 to

(Continued on page 8)

Editorial

Educational policies are spelled out by Institute

The substance of Caltech's educational policies, as formulated by Dr. Arthur Amos Noyes, is published in the Institute's **Policies and Procedures** with the observation that they should be kept continually before the faculty and student body.

The California Tech reprints them here as a reference for the faculty, the students, and the Tech's editorials. Noyes' philosophy of education is progressive and appealing, and the Institute has adhered to most of its points.

However, there have been a few notable exceptions, and these will be the topic of future editorials. Meanwhile we present the quotation for critical examination:

"The four-year undergraduate engineering courses of the Institute shall include an unusually thorough training in the basic sciences of physics, chemistry, and mathematics, and a large proportion of cultural studies; the form for this being secured by eliminating some of the more specialized engineering subjects, which may be pursued in graduate courses by students desiring further professional training. It is hoped in this way to make the undergraduate courses of the Institute a combination of a fundamental scientific training with a broad cultural outlook, which will afford students with scientific interests a type of collegiate education which avoids the narrowness common with students in technical schools and the superficiality and the lack of purpose of many of those taking academic college courses. The instruction in the basic engineering subjects will, however, be maintained at the highest efficiency so that the graduates of the engineering courses may be prepared for positions as constructing, designing, operating, and managing engineers. Provision will also continue to be made, especially in the four-year courses of Physics and Engineering, Chemistry and Chemical Engineering, for the training of students for positions in the research and development departments of manufacturing industries.

"Every effort shall be made to develop the ideals, breadth of view, general culture and physical well-being of the students of the Institute. To this end the literary, historical, economic, and general scientific subjects shall continue to be taught by a permanent staff of men of mature judgment and broad experience; the regular work in these subjects shall be supplemented by courses of lectures given each year by men of distinction from other institutions; the assemblies addressed by leading men in the fields of education, literature, art, science, and engineering, public service, commerce, and industry shall be maintained as effectively as possible; moderate participation of all students in student activities of a social literary, or artistic character, as in the student publications, debating and dramatic clubs, musical clubs, etc., shall be encouraged; and students shall be required or encouraged to take regular exercise, preferably in the form of games or contests affording recreation. It is the purpose of the Trustees to create as rapidly as possible additional facilities for these student activities by the erection of a student union, a gymnasium, and dormitories. Great importance is also attached to making the campus attractive in its architectural and landscape features, because of the influence of such surroundings on the students and on the public.

California Tech

Editor-in-chief—Bob Walsh
Managing Editor—Dave Leeson
Night Editor—Jim Coe
News Editor—Jim Wilkinson
Feature Editor—Mike Milder
Sports Editor—Steve Emanuel
Audience Editor—John Lango
Business Manager—Ed Park

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Letters to the Editor

Editor, The California Tech:

I have just read your recent editorial "Is Caltech Too Narrow?" While I feel you have given a just picture of the typical Techman (and, believe me, they're plenty typical) you seem to have omitted one of the most obvious of all Caltech attitudes—to wit: "I am the neatest guy in the world; just ask me." I am cognizant of the fact that you may have neglected to mention this omnipresent trait simply because it is so obvious, and because there is so little danger of its ever falling by the way-side. However, I feel that, in case it was overlooked, and thus in danger of dying out, it should be brought to your attention.

Maggie Harrington

Secretary's Report

Since Wednesday's meeting was not a regularly scheduled one, the presence of seven beaming guests was gratifying. It was only unfortunate that all of the members of the Board could not be as prompt as our guests.

EDUCATIONAL POLICIES

The question of student activity in the determination of educational policies and changes in curricula of the Institute was discussed at some length. This has become a quite complex question, however two points which came out on Wednesday evening were: will we be able to work with the faculty on general issues or will we have to resort solely to criticism, and the possibility of proposing some changes in the Engineering curriculum in the not too distant future. The second of these points, while less general, is at this time the more pressing issue. A poll of student opinion concerning the Engineering curriculum will be taken soon.

FARRAGO

The next important discussion was upon the apparent rigor mortis which has set upon Farrago. In all probability there will be no Farrago next term. The triumvirate of Scholtz, Robkin, and Lango were present to push forward a Humanities Department-sponsored magazine to replace the soon to be interred publication. This new magazine would solicit various types of written material from anyone who has affiliation with the Institute (Faculty, JPL employees, grad students, etc.). The Board foresees the impending death of Farrago but would like to see a really good magazine take its place. Since all the details of the Scholtz, et al, proposal were not readily available, this discussion will be concluded Monday evening.

PUBLICATIONS COMMITTEE

The other apparent problems led to the establishment of a committee to review all ASCIT publications. Considerable changes, particularly in the jobs of the various business managers, will probably result from the findings of this committee. The committee is composed of the ASCIT Secretary, Treasurer, and Publicity Manager. The views of any interested students are very sincerely solicited.

CLASS SCHEDULES

The ASCIT Board has gone on record with the Educational Policies committee as opposed to classes from 4 to 6 p.m.

Mike Godfrey
ASCIT Secretary

An inside story you ought to know

These famous Arrow Tee Shirts have comfort woven right into them. They can't sag, can't bind, can't stretch out of fit. Here's a fine-spun Tee Shirt that "gives" with every motion you make. And the Dacron reinforced neck band keeps its perfect shape—permanently. Arrow Tee, \$1.25; Arrow Guards (knitted briefs), \$1.25.

ARROW

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MECHANICAL & ELECTRICAL ENGINEERING STUDENTS

Representatives from the
Aeronautical Division of

ROBERTSHAW - FULTON CONTROLS COMPANY

will be on Campus

April 3, 1957

to interview students who will graduate in June.

The Company Brochure is available in the
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Tee means "Tops!" when its an Arrow

Arrow Tee Shirts and knitted brief Guards are made of the softest fine-spun fabric. The Dacron reinforced neck band can't sag out of place. Come in anytime and see our fine assortment of Arrow Tees and Guards. Tees, \$1.25 up; Guards, \$1.25.

Nash's

141 East Colorado Street, Pasadena

SYcamore 6-0181

Audience "Hot Tin Roof" not too subtle

by Dick Kirk

Ella Kazan's production of Tennessee Williams' *Cat on a Hot Tin Roof*, now playing at the Huntington Hartford Theatre, is a none too subtle mixture of sex and noise.

The show deals with the conflicts in a southern plantation family. Big Daddy is dying of cancer. Brick, the favorite son—ex-football star and current drunk—has an unhappy childless marriage. His wife is trying to restore their life together and gain the family estate for Brick. Brother Gooper and wife have brought their children (a small herd of very noisy monsters) to the family mansion to snatch the plantation and commit Brick to a sanitarium.

The play takes place on Big Daddy's birthday and the family has told him and Big Mama that he will not die of cancer. Woven into this mass of lies and petty intrigue is the implication that Brick is a latent homosexual. This, coupled with the death of his buddy, Skipper, started him drinking and made him refuse to be a husband with his wife.

In the first act we are exposed to the problems of the family through a one-sided dialogue between Brick and his wife, Maggie. Brick does little more than down bourbon and hobble around on his crutch while his wife talks. He seems bored with it all, and the audience didn't seem much more interested.

After that though, things start to pick up. The second act was also a one-sided dialogue; this time between Brick and Big Daddy. Thomas Gomez, ranting and swearing in the role of Big Daddy, displays the problems and conflicts of the play with all their filth and disgust. The sex and implications of perversion, the lies and greed that run through the play are displayed with all their repellant force.

The third act sustained this tension and violence as the deceit and corruption in the family burst from the characters into the open.

This otherwise fine production was marred by a slow first act, but the rest of the play lived up to its New York reputation.

Thomas Gomez was a powerful Big Daddy and carried the brunt of the play. His personal success did much to make the evening.

Alex Nicol, as Brick, was particularly effective in the third act.

STATE SY. 2-7139
RY. 1-0385
JAMES DEAN ROCK HUDSON
ELIZABETH TAYLOR
in
"GIANT"

COLORADO
"Bundle of Joy"
and
"The King & Four Queens"

UPTOWN
"The Tender Trap"
and
"Meet Me in Las Vegas"

UNITED ARTISTS
"Ten Thousand Bedrooms"
and
"Ride the High Iron"

Food riots rock Tech; house meals boycotted

by Berken Chang

Students, police clash in Saturday night protest; traffic blocked by bonfires and burning gasoline; wholesale arrests; student house meals boycotted.

The trouble began with the administration's plans to acquire money by raising prices and cutting expenses—a noble American pastime. Next fall student house rent and board at Tech are to be raised 11 per cent. Three services are to be abolished: room cleaning, linen supply and night telephone privileges. Meals are to be a little simpler, but just as nourishing.

Sound familiar and ominous? Here is some more information from "The Tech" (official newspaper of the undergraduates of Massachusetts Institute of Technology), March 5, 1957:

"What began as a small crowd of chanting students turned into a full-scale riot last Saturday night as residents of East Campus demonstrated against the Institute's announcement to increase dormitory rent next term.

"Waving home-made posters declaring 'We protest' and 'lower rents' the students milled about in front of the Dean's home shooting off fireworks and throwing snowballs. As hi-fi sets blast-

ed music from open windows, the rioters began to block traffic with sheets of flaming gasoline.

"Excitement heightened as fire trucks and police cars arrived. Each new paddy wagon on the scene was greeted with loud cheers and shouts of 'Let's all go to jail!' Police even entered the dorm and picked up boys who were heckling from open windows.

"A little after two a.m., a march of several hundred students started down Memorial Drive, stopping traffic on the way. They spread rubbish across both lanes on Memorial Drive and set fire to it, completely blocking traffic. More squad cars arrived.

"For some fifteen minutes after the arrival of the patrol cars,

Campus Brewins

World Affairs

"God, Baja was neat," said Lango, his face quietly sloughing off. "How do you like my crazy tan?"

"That all you got in Mexico?" asked the Beak, concealing his own fluorescent-like pallor behind a copy of *Woman's Monthly*.

"Well, that's all we brought back," Lango said, "I hope."

Sports

The CIT baseball squad went south too, and there played their own curious brand of ball. Between triumphs, "Grace" Kelly led the uninitiated south for a language lesson. Hardly anyone had trouble with the plural genitive, but one member, disappointed in politics, spent his moody hours in the singular reflexive.

National Affairs

Said Janswine, "I was there

the policemen were bombarded with snow, ice and bottles. Most of the injuries received by the participants in the riot did not require treatment, but at least one student and three policemen were reported hospitalized."

at the faro table, and she asked me if I'd like my luck changed. Well, yes, she was sort of dusky. Quoth Ratstabs, "Spent most of my time with Dxx. Oh, hell, no. The other Dxx."

Cried the Reed girl, "Oh, you're from Caltech? Why, I went to the Lost Weekend with a boy from Dabney."

Dames in the News

Stated the Ricketts fellow, "Quite a snow party, oh quite, Parks? Fellow was absolutely blind. Quite."

Sighed Douglass, "Well no, Greech, I've got the female part. What I need is a new male part to replace the one I broke."

Rasped G. "Water" Kloset, "Are you serious, Englishman? I give away nothing, except, of course, to my roommate."

Intoned Major Syngman Lee, "So, I told her she could take her Athenaeum food and . . ."

Religion

Ger? (He won't be stopping. He's going all the way with a woman to Seattle. No, Miller's not growing a beard. Yes, he's a sosh major. Me? Hell, just write Netboy, care of Vesuvio's Bar, San Francisco, California.

Sticklers!

WHAT IS A SQUAD OF SOLDIERS WHO DON'T GET A LUCKY BREAK?
(SEE PARAGRAPH BELOW)



BASIC TRAINING for R.O.T.C. men. When the talk turns to tactics, remember this: troops who don't get a Lucky break soon become a *Solemn Column!* Why? Any private can tell you: Luckies outrank 'em all when it comes to taste. You see, a Lucky is all cigarette . . . nothing but fine, mild, good-tasting tobacco that's **TOASTED** to taste even better. On the double, now! Light up a Lucky. You'll say it's the **best-tasting** cigarette you ever smoked!



WHAT IS A POOR BIRD'S HOME?

A. EUGENE GRAVELLE, Parrot Garret
MINNESOTA

STUDENTS! MAKE \$25
Do you like to shirk work? Here's some easy money —start Sticking! We'll pay \$25 for every Stickler we print—and for hundreds more that never get used. Sticklers are simple riddles with two-word rhyming answers. Both words must have the same number of syllables. (Don't do drawings.) Send your Sticklers with your name, address, college and class to Happy-Joe-Lucky, Box 67A, Mount Vernon, N. Y.

WHAT IS A HAUNTED WIGWAM?

BOB MC KINNEY, Creepy Tepee
KANSAS

WHAT IS A SLOVENLY FLOWER?

ROGER GROSS, Sloppy Poppy
U. OF OREGON

WHAT IS A MAN WHO PAWNS THE OLD FAMILY CHAIR?

BRYCE MOLEN, Rocker Hochoer
OKLAHOMA A & M

WHAT IS A MAN WHO CLASSIFIES SNAKES?

JED JACOBSON, Viper Typor
JOHNS HOPKINS

WHAT IS A CHINESE BOAT WITHOUT A BOTTOM?

GENE MYERS, Sunk Junk
LONG BEACH STATE COLL.

Luckies Taste Better

"IT'S TOASTED" TO TASTE BETTER . . . CLEANER, FRESHER, SMOOTHER!

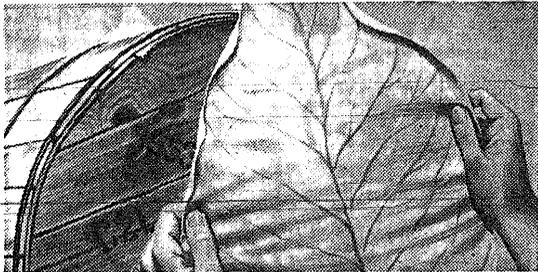


Cary Middlecoff

GOLF CHAMPION, SAYS:

"VICEROY HAS THE SMOOTHEST TASTE OF ALL!"

SMOOTH! From the finest tobacco grown, Viceroy selects only the Smooth Flavor Leaf... Deep-Cured golden brown for extra smoothness!



SUPER SMOOTH! Only Viceroy smooths each puff through 20,000 filters made from pure cellulose—soft, snow-white, natural!



CARY MIDDLECOFF'S ADVICE:

"SMOKE SMOOTHER VICEROY!"



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The Barfly

by Kay Sugahara and Ed Shuster

This column is dedicated to those indiscriminating persons who feel all alcoholic beverages consist of either beer or bourbon.

The first drink in this series is commonly known as the Last Kiss:

LAST KISS

- 1/2 oz. gin
- 1 oz. bacardi
- 1/2 tsp. brandy
- 1/2 tsp. vermouth
- 1/2 tsp. lemon juice
- 1 tsp. fine sugar

The proper way to mix this drink is to measure all quantities precisely. Shake all the above quantities with cracked ice and strain the mixture into a chilled glass. From experimentation it has been found that deviating from the recommended percentages detracts from the balanced flavor.

The next step is to present the glass, full of course, to the proper female. It is not guaranteed to make you the life-of-the-party but is highly recommended to gain the desired end as indicated by the title, i.e. the Last Kiss. The drink can do no more than this but if you can't handle the situation from here on, don't blame me.

The Fair Sec's

by Al B. Doya

Tucked away in a corner of the Kellogg radiation lab is England's latest contribution to the health and welfare of the North American colonies (and Caltech in particular) in the form of Jan Cooper, a vivacious and lively good will ambassador who belies the old story about all Britishers being grim and austere.

Jan, who celebrates next month the first anniversary of her arrival in America, claims the American way of life has several advantages over life in England.

High on the list of her special interests are swimming, dancing, partying in general, and bicycle racing. Jan claims several years experience in the cycle racing field, all acquired while in merrie olde England. Since coming to the USA she has traded in her no-cylinder two-wheeler for a trim-looking V-8 Ford that is the envy of about ninety per cent of the car-loving members of the student body.

Inevitably during the course of our interview the question of Jan's impression of Caltech men arose. "Just like any place else," she said. "Some are very nice,

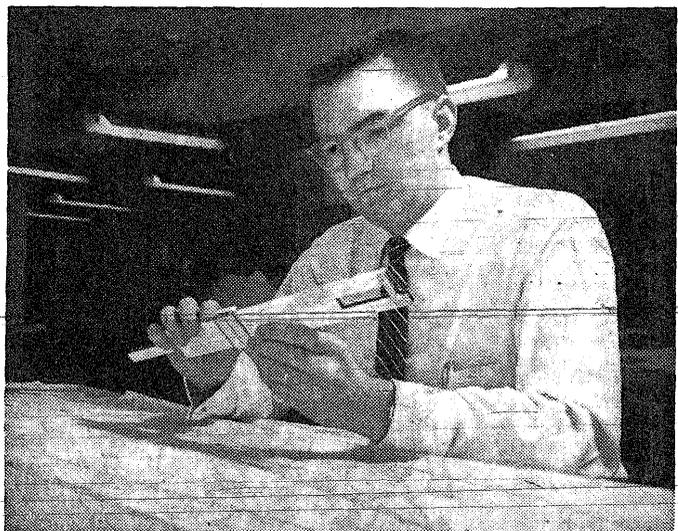


Jan Cooper

some not-so-nice, and, well, you know, you see all kinds." Don't give up though, boys, for she was quick to add that she was much more impressed with Caltech men than the male population of England.

With a recommendation like this to build your egos and bolster your confidence, I'm sure that it will be easy for you to change course slightly on that long walk down to Bridge for that eight o'clock so that you pass through Kellogg and get a glimpse of at least one person with a happy face and cheery disposition before you settle down into the daily grind.

A Campus-to-Career Case History



After securing field data, Mac McLeran lays out plans for new and additional telephone services.

Figuring on the future

Thurston B. McLeran, called Mac by his friends, is an engineer with Southern Bell Telephone and Telegraph Company at Decatur, Georgia.

Much of his work is concerned with the future—planning for telephone service to meet predicted demands a year, or five years ahead.

"My biggest job to date," Mac says, "has been engineering additional communications facilities for an airbase and adjoining aircraft factory in our district. This means making field studies of the customer's requirements and planning how new telephone facilities can best meet them. Then I translate this in-

formation into working plans for our construction and installation people. It's a big job, and gives me a lot of responsibility. It's challenging work, too, for an engineer."

Figuring on his own future concerns Mac also. He graduated from Georgia Tech in 1952, with a B.S. in Electrical Engineering. He went with the telephone company because of the advancement opportunities it offered. Today, Mac is married and has one child. He looks forward to an interesting career in a growing business where individuals can advance as far as their abilities will take them.

There are many rewarding career opportunities in all Bell Telephone Companies, and at Bell Telephone Laboratories, Western Electric and Sandia Corporation. Your placement officer can give you more information about Bell System Companies.



BELL TELEPHONE SYSTEM

DOUBLED AND REDOUBLED

by Gary Bretthard

North (Finley)

S-A 8 2
H-7 5 3
D-7 6 4 2
C-A J 4

West (Sugahara)

S-J 5
H-J 10
D-A 10 9
C-K Q 9 6 5 3

East (Breitbard)

S-Q 9 7 6 3
H-A K Q
D-K Q J
C-8 2

South (Mack)

S-K 10 4
H-9 8 6 4 2
D-8 5 3
C-10 7

Bidding:

	North	East	South	West
Pass	Pass	1 S	Pass	2 C
Pass	Pass	2 NT	Pass	3 NT
Pass	Pass	Pass	Pass	

Opening Lead: 4 of Hearts

The above hand was one of the 16 which were played in the recent National Intercollegiate Bridge Tournament. If you are at all familiar with the workings of this contest, you know that each hand is set up as a problem for one team or the other—what they call a par. In other words, the bidding and the play are made relatively simple for one pair while their opponents must

overcome one or more obstacles in order to make the established par.

In this particular hand the bidding was straightforward. Three no-trump was the proper contract for East-West, and it was up to the declarer to make the proper plays. As a tragic example of what may befall the unthinking player, I offer my own misplay of this hand as East, the declarer. I hope to do penance by sacrificing pride in the name of better bridge playing.

I took the opening lead of the 4 of hearts with the King and then attempted to organize a line of attack on the hand. I properly came to the conclusion that clubs must be established; however, on the first lead of the suit I made the play which caused the downfall of the hand.

The improper play was to lead clubs from my hand and play high on the board. I would like to add, to the great credit of my opponents, that they, at this time, made the proper play. Pete Finley, holding the A J 4 of clubs at my right, did not

take the first lead of clubs with his ace. Instead, he ducked, and it became impossible for me to set up clubs. The reason for this is simply that it requires two more leads to set up the suit. The second of these must necessarily come from the board, and uses up the board's only outside entry. If, instead, North takes the first lead of clubs, the other high club remains as an entry to set-up the suit.

Now let's consider the proper way for East to handle the club suit. He should lead a low club from his hand and then duck completely on the board. He doesn't care what card his opponents use to win this trick. On the second lead of the suit, with the K Q remaining on the board, he plays high. If then North takes his ace, the suit is established with an outside entry in diamonds. If North refuses the trick, clubs are led again from the board, clearing the suit and keeping the outside entry. In either case there is no defense against this offensive play.

DOC CLARK

(Continued from page 1)
But many companies care little about specific option or grades.

Interesting facts

Doc Clark offers the following information about the Placement Office:

Starting as an alumni organization designed to get jobs for depression-stricken alumni, the Placement Office has evolved to the point where in these more prosperous times its major activity is arranging meetings between students who are prospective employees and the 160 or more companies who want to hire them, so that the students can interview the companies (companies don't interview students any more).

The Placement Office keeps lots of statistical records, some of which make interesting reading: Last year, B.S. graduates received a median of 10 interviews each, and three offers each. The field employing the greatest number (and paying the most) was electrical and mechanical manufacture.

Median starting pay for graduates of the class of 1956 was \$430 a month, for M.S. grads, for engineers \$720, and for Ph.D.'s \$590. Starting salaries for all degrees were markedly higher in the field of engineering than in science.

78 men out of the 200 total decided to continue their education in graduate school.

The Placement Office also handles part-time jobs and summer jobs. For example, last year 117 Techmen filled some of the 564 part-time jobs which were open, receiving salaries ranging from a low of \$.50 an hour for baby sitting to a high of \$5.00 an hour for tutoring.

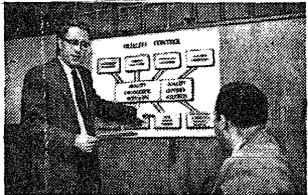


"What's it like to be A PHYSICIST AT IBM?"

Five years ago, college senior Nick Hemmer asked himself this question. Today, as Administrative Assistant to the Quality Control manager, Nick reviews his experience at IBM and gives some pointers that may be helpful to you in taking the first, most important step in your career as a physicist.

"I was tremendously impressed," says Nick, "by my first plant tour. When you go through the facilities—meet the men and get an idea of the problems they handle—you can't help but become interested. Add the friendly, informal work atmosphere, and you know right off the bat these people have a story to tell."

Nick came to IBM in 1951 with a B.S. in physics. He started as a Technical Engineer—in Test Equipment Engineering—working on an analog bombing system. When that project moved from the Endicott to the Poughkeepsie plant, Nick followed it, becoming first an Associate Engineer, then a Project Engineer. As the lat-



Heading up Quality Engineering

ter, he worked on IBM's first transistorized electronic computer—the 608.

By November, '55, Nick was heading up Quality Engineering in the Quality Control Division of the Poughkeepsie plant. Recently promoted to Administrative Assistant to the Quality Control manager, Nick now concerns himself with the fundamental operations and policies of this 450-man division. Quality Control is responsible for the performance of IBM's vast array of business machines—from simple sorters and punches to the "electronic brains."

What an IBM physicist does

"The problems of Quality Control in this business are endless," Nick reports, "and fascinating to the physicist. There's process control—the manufacture of components such as transistors and cores . . . of the contents of a gas . . . of the concentricity of an etch solution . . . of the diffrac-

tion of alloys . . . or of the properties of metals, such as the resistivity of germanium. Then, there are the important 'analysis of failure' and reliability studies, in which you seek to determine, for example, the 'life



Problems fascinating to the physicist

expectancy' of a device, the mean time between failures, or perhaps which step in a process has the greatest effect on the equipment involved. You may be asked to control the deposit of glass on X-ray tubes to avoid spill-over, or microscopic spotting. Or you may be dealing with arc-suppression, or gaseous electronics, the grass roots of instrumentation; or in the estimation of tolerances, or



Extensive educational facilities

in correlation coefficients—that is, in physically sound numbers."

Nick has been instrumental in encouraging many college physics majors to come to IBM. "I find they're interested in questions like these," he says: "How would you go about determining the 'life' of electrons in transition from the valence to the conduction band?" Or, in the manufacture of magnetic inks, "How can the grain size of the iron content be controlled . . . or its viscosity regulated over wide temperature ranges? How would you control the concen-

tration and concentricity of colloidal solutions?" "Present a job in terms of actual problems," believes Nick, "and you'll get the man's interest—for it's his career and his future that have top priority."

How about further study?

Nick has taken full advantage of IBM's extensive educational facilities to get ahead at IBM. He took at least one course each semester on subjects within his immediate work area—courses on digital and analog computers and on their components such as cores and transistors. He found time to take management courses as well. "If you want opportunity for study," Nick says, "IBM will provide all you want."



Promotion almost inevitable

Asked about opportunities for advancement at IBM, Nick says, "The situation could hardly be better in that respect. With sales doubling every five years on the average, promotion is almost inevitable."

IBM hopes that this message will help to give you some idea of what it's like to be a physicist at IBM. There are equal opportunities for E.E.'s, M.E.'s, mathematicians and Liberal Arts majors in IBM's many divisions—Research, Manufacturing Engineering, Sales and Technical Services. Why not drop in and discuss IBM with your Placement Director? He can supply our latest brochure and tell you when IBM will next interview on your campus. Meanwhile, our Manager of Engineering Recruitment, Mr. R. A. Whitehorn, will be happy to answer your questions. Just write him at IBM, Room 9301 690 Madison Ave., New York 22, N.Y.



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SAFE AS COFFEE

Beaver ball club gains much needed experience on trip

by Bill Kern

Mixed emotions were in order as the Beaver baseballers returned from their trip to sunny San Diego. The four-day southern sojourn saw some of the best baseball ever played by a Caltech team, but also some of the worst. The "shakedown cruise" gave the Beavers a chance to develop under the pressure of some stiff competition which served to point out weak spots with awesome rapidity. The record for the trip shows one win and three losses.

In the first game Wednesday at El Toro Marine Air Base, Coach Ed Preisler used pitchers Goldberg, Johnson, Howell and Nelson but failed to halt the Marine attack at Tech lost 12-5. The vacation layoff noticeably affected Beaver fielding as four errors and seven pass balls combined with 15 walks and 20 El Toro hits to run up the score.

By the next day, however, the situation settled down as Howell went all the way to defeat the San Diego Naval Training Center 8-3 in a very satisfying ball game. The Beavers did it with eight hits including a superfluous homer by Ed Berry in the ninth. Tony Howell gave a fine exhibition of almost perfect control coming through in the clutch to frustrate the Navy hitters and rate honors as hero of the trip.

The next two games were dropped to San Diego State 14-7 and Marine Corps recruit depot 19-0, in a two day orgy of errors and wild hitting. Against MCRD some fifteen Beavers were stranded on base although the game only went eight innings.

Overall statistics for the trip show the team batting well with an average of .200 and several hitters over .300, but with an alarming number of errors. High winds which prevailed were probably a contributing factor but still enough errors were made to last the whole season. Just how much good the trip did in seasoning the inexperienced Beavers remains to be seen, but at any rate it would appear that the San Diego spring trip has achieved the

Frosh ball seeks depth

FRESHMEN! The national sport of America needs you! Fame, travel, adventure, and a numeral awaits you. No experience is necessary. Merely seek out the frosh football coach, Jack Petersen, and inform him of your burning desire to play baseball. While you're at it, ask him about fringe benefits and all day excursions to such famous Southern California resorts as Pomona and Redlands. The opportunity is now. Don't pass it up. Become a baseball player.

status of an annual event.

Monday, after a day's rest, the Tech nine easily defeated Cal Baptist in Azusa with a score of 11-6. Nelson, Howell and Goldberg handled the mound chores as the Beavers collected 11 hits while being charged with 33 at bats, a .333 clip! Yesterday LaVerne played here, and tomorrow league play begins with a trip to Pomona for a double header. Nelson and Howell will start with Snyder and Goldberg ready for relief.

Netmen throttle Paz Naz, 7-2

The Caltech tennis team hosted the Pasadena Nazarene Crusaders Tuesday. Caltech won four singles and all the doubles emerged triumphant, 7-2. The first doubles match was the closest and the best of the day's matches. Frank Cormie and Bernie Mueller, considered the Beavers' best doubles team for the past few years, extricated themselves from several tight spots to win, 4-6, 6-4, 6-3.

The results:
Spaits (PN) def. Tom Hays (CIT) 6-0, 6-0.

Dave Yount (CIT) def. Dobson (PN) 1-6, 6-3, 6-4.

Bernie Mueller (CIT) def. McPhail (PN) 6-0, 6-2.

Bob Tokheim (CIT) def. Harper (PN) 6-0, 6-0.

Reed Warriner (CIT) def. Herlacher (PN) 6-4, 6-2.

Wendling (PN) def. Clint Frasier (CIT) 6-0, 6-0.

Cormie-Mueller (CIT) def. Spaite-McPhail (PN) 4-6, 6-4, 6-3.

Hays-Yount (CIT) def. Dobson-Harper (PN) 6-1, 6-1.

Warriner-Tokheim (CIT) def. Wendling-Herlacher (PN) 6-4, 6-2.

Frosh Sports

BASEBALL

The Frosh baseball team, under the guidance of Jack Petersen, seems to be headed for a good season if it can overcome the lack of an experienced catcher.

So far neither of the two possibilities, Dave Singmaster and Sid Roth, have had previous experience. Dave Blakemore, who plays third, has some experience. The other members of the team are shaping up well. Lance Wallace plays first; Tom Jovin and Grant Carrington take second; Herm Hartung, short; Bob Golden, outfield; Bill Smith, first-outfield; Dave Singmaster, catcher-outfield; Roth, catcher-manager and John Walsh, starting pitcher and clean-up hitter.

The Frosh played one practice game with Muir High before vacation and lost 5-1, with most of the fun coming on passed balls by the catchers. Wednesday, they played their first League game with Whittier; Friday they play LAPC, both here.

SWIMMING

As usual the Frosh swimming team is looking like a winner. At the Redlands Relays, March 8, they came in second to a powerful Pomona team. Today, they have a dual meet at Redlands, 4:00. The big men on the team are Dave Tucker and Pete Rony in the freestyle; Wally Stolz in backstroke; Bob Thompson, butterfly; Don Voet, breaststroke; and Bill McLennan and Rony in diving.

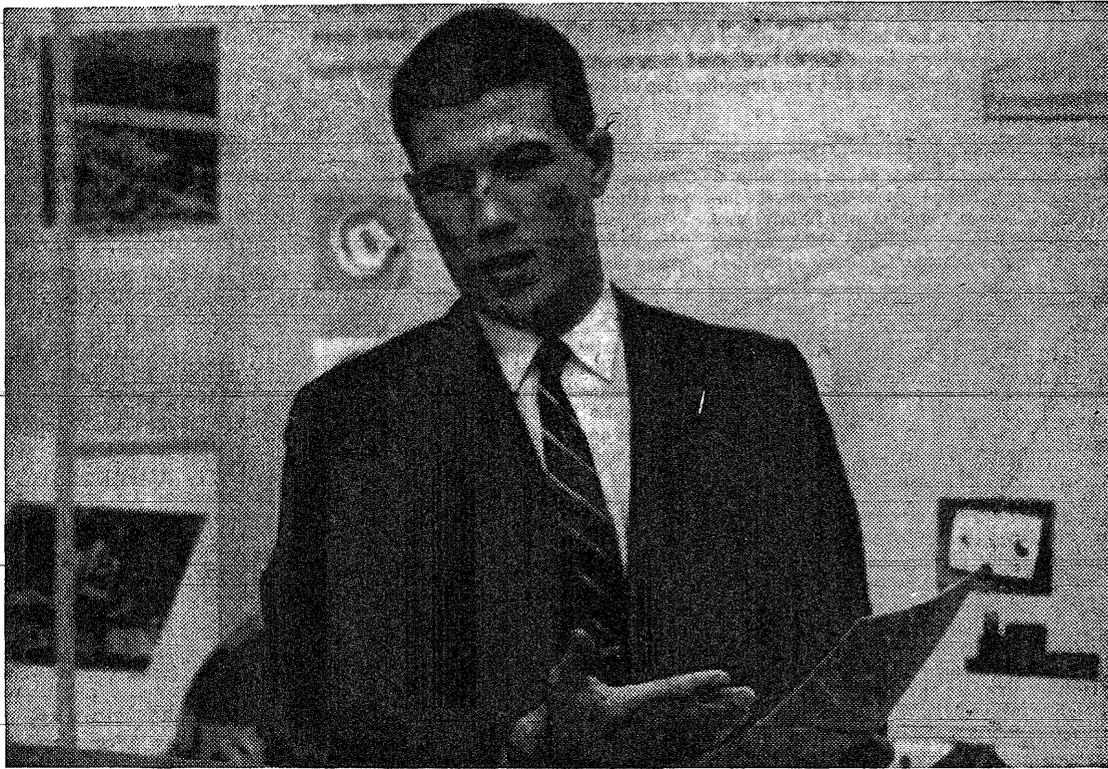
TRACK

The Frosh track team doesn't have more than one man out for any event other than javelin and discus, which have two and three. The men in each event are: The mile and two mile, Bruce Campbell and Wes Shanks; 880, Lowell Clark; 440, Tom Keil; hurdles, Carl Gottschall; pole vault, Al Laderman; high jump, Mel Holland; discus, Mike Magie, Bruce King and John Shier; shot put, Mike Magie; and javelin, Lennes Purnell and John Williamson. The team has no men in the 100, 220, broad jump or relays.

So far, in two meets, Caltech has come in last and three men have placed. Laderman scored two thirds, Holland tied for fourth, and Magie scored two fifths in the discus. Saturday they travel to Whittier for a dual meet.

TENNIS

The Frosh tennis team shows promise for the coming season. They have won almost all of their practice meets and lost two league matches by 5-4. Number one man on the team is ambidextrous John Walsh, who is undefeated. The other five ranked men, in order, are Dave Butterfield, Carl Morris, John Burd, Mike Magie, and Marty Carnoy, player-manager. Also on the team are Neil Sheeley, Lou Toth and Pedro Bolzatis. Saturday Caltech hosts Whittier at 1:30.



"A big company works for me..."

JOHN D. EVANS, University of Pennsylvania, 1952

"I began working on a training program for General Electric in the summer of '52. Right now, I'm 'Employee and Plant Community Relations Manager' of my company's new plant in Burlington, Iowa. One of the advantages I found in working for a big company such as General Electric is that, because of its size, it is able to give me, and other college-graduate employees like me, a wide variety of training and experience in any one of 159 plants all over the country. Through an extensive on-the-job training program, it is providing me with the opportunity to become one of the top men in my field, and I know that as long as I apply myself to each job, I'll keep moving up. The way I look at it, General Electric is helping me help myself. That's why I say I'm working for a big company, but a big company works for me, too."

size. 27-year-old John Evans is just one example of the thousands of college graduates at General Electric, each being given the opportunity for self-development so that he may grow and realize his full potential.

As our nation's economy continues to expand in the years ahead, thousands of young people of leadership caliber will be needed to fill new positions of responsibility in American industry. General Electric feels that by assisting young people like John Evans in a planned program of personal growth, we have found one way of meeting this need.

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Beaver thinclads prepare for first conference meet

This Saturday at Whittier, the Caltech varsity and frosh track teams will open their regular SCIAC season. The Beaver squad is not too strong this year, but should still beat the Poets.

Tech's main strength lies in the middle distances with Bob Emmerling in the mile, Tony Leonard and Mike Rusch in the half, and Danny Wulf in the two mile. Coach Claude Fiddler's charges should take first in all these events without any trouble. Both Rusch and Leonard will probably get under two minutes, and either one or both of them should break Don Lewis' year-old record of 1:56.9 before the season is over. Wulf is a hard-working distance runner whose improvement from week to week and season to season is phenomenal. He could be undefeated this season in league competition, excepting, of course, Oxy.

Coach Bert LaBrucherie lost a cinch first place in the javelin when Vic Johnson was declared ineligible. Johnson appeared to be following in the footsteps of Phil Conley, breaking Conley's frosh record last year. Whittier's Joe Sarthou, who has done

166 ft. in the event, could win it. The rest of the events are a toss-up, with Whittier taking most of the field events.

Linksters need scribe badly

Members of the golf team! Do you want fame, glory, the undying acclamation of the student body? Do you want your exploits to be the topic of breathless conversation? If so, then you need publicity; you need a means of reaching the ordinary Techman, who in most cases is woefully ignorant of the team's progress. The California Tech is that means. All you need is someone to report on the happenings of Tech's golf team to the sports department. If you are interested in furthering golf by reporting it to the Tech, please see Steve Emanuel in Fleming or Bob Walsh in Ricketts as soon as possible.

CALENDAR
Thursday, March 28
 SWIMMING Caltech at Redlands
 BASEBALL LaVerne at Caltech (Vars.)
Friday, March 29
 GOLF Caltech at Pomona
 BASEBALL LACC at Caltech (Fr.)
 SWIMMING LACC at Caltech
Saturday, March 30
 BASEBALL Pomona at Caltech (Vars.)
 TRACK Caltech at Whittier (Vars.)
 TENNIS Caltech at Whittier (Vars.)
 TENNIS Whittier at Caltech (Fr.)
Tuesday, April 2
 TENNIS Webb School at Caltech (Fr.)
Wednesday, April 3
 SWIMMING Caltech at Santa Monica
Friday, April 5
 GOLF Loyola at Caltech
 TENNIS Caltech at Santa Barbara (Vars.)
 SWIMMING Occidental at Caltech
Saturday, April 6
 TENNIS Caltech at Cal Poly (SLO Vars.)
 BASEBALL Occidental at Caltech (Vars.)
 BASEBALL Caltech at Occidental (Fr.)
 TRACK Tech at Redlands

Interhouse, Discobolus races tighten up as year nears finish

Going into third term, the Interhouse trophy race is about as tight as it could be. Three and a half points separate the first three names with two sports, football and basketball, yet to be played.

Blacker is in first place with 75½ points, Dabney second with 74½, and Fleming third with 72. Throop and Ricketts round out the roster with 50½ and 48½, respectively.

In football, Fleming and Blacker appear to be the strongest; while Dabney and Ricketts should have fairly good basketball teams. However, interhouse teams being what they are, it is impossible to say with any certainty just who will beat who. Anyone of the three top teams could win it, and it would be no surprise to anyone.

The Discobolus race is just as tight, with Ricketts in the lead with seven points, Throop and Fleming in second with six each. Blacker has four and Dabney brings up the rear with one point.

The trophy is currently in the hands of Fleming by dint of their successful challenge

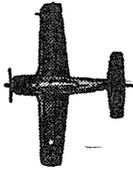
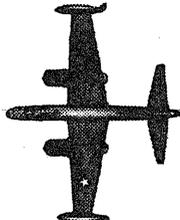
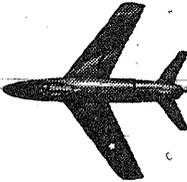
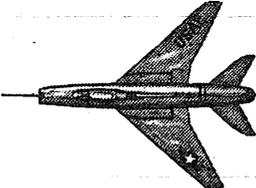
against Throop Club in track. As of this writing, Fleming has not yet been challenged. At the end of the year, the house which has the most points gets to keep the trophy during rotation of the following year.

Standings

INTERHOUSE	
Blacker	75½
Dabney	74½
Fleming	72
Throop	50½
Ricketts	48½

DISCOBOLUS	
Ricketts	10
Throop	8
Fleming	7
Blacker	2
Dabney	1

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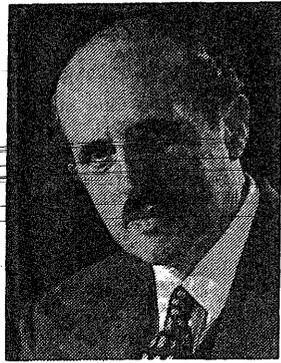
Early to bed and early to rise
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 The truth of such nonsense by me is contested;
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Dr. Alfred Stern

Around The Quad

STERN

Dr. Alfred Stern, associate professor of philosophy and languages at Caltech, has been invited by the University of Paris to teach a course at the Sorbonne during this spring term. The title of the course will be, "The Philosophy of History and the Problem of Values."

Professor Stern is the author of several philosophical books and has just finished a new book on his topic.

PAULING

Dr. Linus Pauling, Caltech's Nobel Laureate, was recently made an honorary member of the American Association of Clinical Chemists. The honor was conferred at a recent meeting of the local association. Dr. Pauling gave the principal talk on "The Structure of Water Aqueous Solutions."

GOETZ

Dr. Alexander Goetz, associate professor of physics at Caltech, has been appointed scientific consultant to the Los Angeles Air Pollution Control District. Dr. Goetz's duties will consist of supervision and evaluation of research.

INDUSTRIAL RELATIONS

The twenty-seventh series of evening meetings on personnel administration and supervision offered by the Industrial Relations section opened March 18 and will continue until May 23. One hundred forty-five representatives of fifty-nine regional companies will attend, according to Prof. Robert D. Gray, director of the section.

Y News

NEW OFFICERS

After a dinner at Wes Hershey's home last night the YMCA officers for the coming year took office. Officers elected March 8 were Jim Weaver, chapter president; John Lango, vice-president; Alan Berg, secretary; Tom Jovin, treasurer; Nelson Byrne, publicity manager, and Kent Frewing, regional representative.

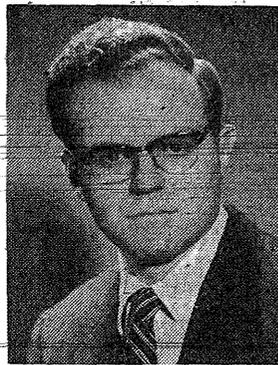
COMING CONFERENCE

An AFSC college conference at Camp Colby has been scheduled for March 29-31. The topic under discussion will be "The Problem of Integration in American Life." Further information and reservation forms may be obtained from the Y office.

HEWITT

(Continued from page 1)

1945, he was an operations analyst with the U. S. Air Forces. He has held two Guggenheim fellowships (1945-46, 1955-56), both spent in research at the Institute of Advanced Study, Princeton, New Jersey. He has taught at Harvard, Byrn Mawr, and the University of Chicago, and was visiting professor at the University of Uppsala, Sweden, in 1951-52. He has been editor of the Pacific Journal of Mathematics, and associate editor of the American Mathematical Monthly, the Duke Mathematical Journal, and the Proceedings of the American Mathematical Society. Professor Hewitt's mathematical interests are: topological spaces, functional analysis, integration theory, integral transforms, and algebra.



Dr. Edwin Hewitt, professor of mathematics at the University of Washington, will be on campus April 1 and 2 for informal and formal talks.

New Tech Staff

This issue of the California Tech is the first endeavor of the new staff, under the leadership of Bob Walsh, editor-in-chief. New assistant editors include: Dave Leeson, managing; Jim Cole, night; Jim Wilkinson, news; Mike Milder, feature; Steve Emanuel, sports; and John Lango, audience.

Student Shop

Applications for membership in the Student Shop are now available from John Conover, Blacker; Andy Perga, Dabney 35; and Alan Forsythe, Dabney 27. The Shop accepts members only once during each term; so applications must be submitted immediately to one of the above to be accepted. Both undergrads and grads are eligible.



What's doing... at Pratt & Whitney Aircraft

Professors practice what they preach . . . and vice versa

Following a practice of twenty years, Pratt & Whitney Aircraft will again welcome a group of college professors as members of the engineering staff during the coming summer months.

Last year our "summer professors" represented colleges from coast to coast. They tackled important projects in such diverse fields as instrumentation and vibration, combustion, compressible flow, and materials development. Despite the limited time available to these men, they made significant contributions to our overall effort.

Though it was to be expected that both the company and the participating professors might benefit directly from such a program, the sphere of influence has been much broader. The many students who are taught by these professors during the college year are sharing the ultimate benefits . . . profiting from lectures that are sparked by the kind of practical experience that can be gained with a recognized industry leader like Pratt & Whitney Aircraft.

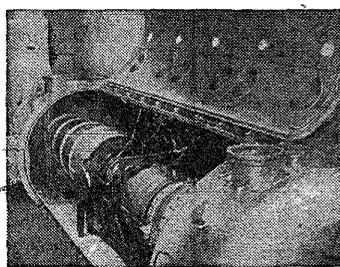
ATTENTION GRADUATES
on
Tues. April 2
A General Tour of the
JET PROPULSION LAB.

Followed by a free dinner and an opportunity to meet with JPL representatives is being offered to all graduate students and all students graduating this spring, who are interested in full time employment possibilities at J.P.L.

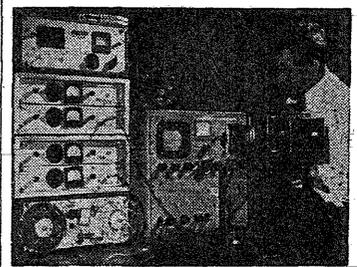
For further information phone SY 0-1141 ext. 301 or 325 or contact your student placement office.



Several "summer profs" voluntarily spent part of their time conducting refresher courses for P & W A's young engineers.



One assignment involved a comprehensive survey of equipment for the expansion of high-altitude test facilities in Willgoos Laboratory, the world's most complete, privately owned jet engine lab.



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