

AFROTC To Invade

Caltech's AFROTC Detachment, after last year's successful annihilation of Los Angeles County in a mock air defense exercise, is girding itself for a major invasion of Edwards AFB. As one of the highlights of the term, this base visitation will include a tour of the base, a parade, and a formal dining-in. The tour will include the center and NASA facilities, the flight line, and a look at the XB-70 and X-15. The dining-in, a traditional Air Force event, will include dinner at the Officers' Club, special guests, and rounds of colorful toasting in the tradition of previous dining-in ceremonies.

Parker Bites

The new ROTC program going into effect this year will provide for major revamping of the curriculum. Recently passed by Congress, this program includes a new approach to classroom training and \$40 a month pay (tax free!) for upperclassmen. In addition to the change in classroom material less time will be spent marching around the soccer field. The drill team has already received an invitation for a three-day fling and drill competition in Tucson during the first part of second term.

The detachment has a new officer who is a qualified Air Force pilot so that it can once again offer orientation flying for cadets.

This new high power approach will enable the detachment to wipe out California or even the world in this year's attack.



Bewildered frosh wanders around Camp Radford in search of healthy upperclassman with whom to discuss problems. Note casual attire, so important for free intellectual comfortable atmosphere.

JOIN THE TECH!

Faculty Membership Changes With Many Promotions and Retirements

Several changes in the Caltech faculty have been made since last year, including new positions, promotions, and retirements.

Dr. Simon Ramo, prominent industrialist and scientist, was elected to the Caltech Board of Trustees last July. Dr. Ramo is a Research Associate in Electrical Engineering and President of the California Institute Associates.

Also this summer two members of the faculty were named Professors Emeriti. William R. Smythe, Professor of Physics, and Don M. Yost, Professor of Inorganic Chemistry, received the honor on their retirement July 1. Hugo Benioff, Professor of Seismology, will also become Professor Emeritus on his retirement in October.

New Heads

In other faculty changes Horace W. Babcock became Director of the Mount Wilson and Palomar Observatories, succeeding Ira S. Bowen, who will remain as a Distinguished Staff Member. As Director of Physical Education and Athletics, Warren G. Emery succeeds Harold Z. Musselman, who remains as Ad-

ministrative Advisor on a half-time basis.

H. H. G. Nash has retired as Secretary, being replaced by James N. Ewart. Nash will continue as Assistant Secretary-Treasurer to the CIT Associates. John B. Weldon is the new Registrar, succeeding Henry I. Weitzel.

New Posts

The new post of Executive Officers of the Division of Physics, Math, and Astronomy will be filled by H. F. Bohnenblust and Jesse L. Greenstein. Harold Lurie has been named Assistant Dean of Graduate Studies as well as Professor of Engineering Science.

C. N. Allen has been promoted to Professor of Geology and Geophysics, and D. E. Coles is now a Professor of Aeronautics. Others who have received Professorships are J. Beverley Oke (engineering science), C. J. Pings (chemical engineering), and Marten Schmidt (astronomy). New Research Associates in Biology are Erich Heftman and G. L. Keighley.

Newly named Associate Professors are D. L. Anderson, S.W.

Smith, H. P. Taylor (geophysics); David Braverman, F. B. Humphrey (electrical engineering); P. J. Blatz (materials science); E. C. Dade (math); S. C. Frautschi (physics); and S. I. Chan (chemical physics).

Ari Ben-Menahem and Egbert Kekeleit have been appointed Senior Research Fellows in geophysics and physics respectively.

New Vacancies

Along with Linus Pauling, who resigned as Professor of Chemistry (but who will remain as Research Associate for one year), the following have resigned: Anthony Demetriades, Senior Research Fellow in Aeronautics; Arthur Erdelyi, Professor of Mathematics; K. R. Johansson, Associate Professor of Environmental Health Engineering; P. A. Longwell, Associate Professor of Chemical Engineering; and H. M. McConnell, Professor of Chemistry and Physics. Others resigning are R. L. Mossbauer and J. R. Pellam, Professors of Physics; S. S. Penner, Professor of Jet Propulsion; Cushing Strout, Professor of History; and H. W. Liu and S. R. Valluri, Senior Research Fellows in Aeronautics.

Large New Class Matriculates at Tech

The class of '68 will be 205 strong at entrance, the largest in years; and another record has been set — for the 62nd straight year, all frosh are males.

Although the students come from 32 states and three foreign countries (Italy, Greece, and Hong Kong) 40 percent of them are from California. This is two percent higher than last year, but the same as the average for the last six years. Those coming from west of the Mississippi comprise 63 percent of the class.

Numerically, 83 frosh are from California; New York is second with 11; and Washington, Illinois, and Massachusetts each have 7.

As usual, and contrary to what one might think, most frosh came from public and parochial schools (95 percent). Only seven frosh are from private schools and three are from foreign colleges.

Money!

The incoming class boasts 17 Merit Scholars. Tech itself awarded \$96,000 in scholarships,

a drop of \$8,000 from the corresponding figure for last year. Dr. Peter M. Miller, Assistant Director of Admissions and Undergraduate Scholarships, stated that "this class is better taken care of than ever before" with respect to financial assistance.

The new maximum stipend of \$1,500 for California State Scholarships goes to 20 frosh. (Incidentally, Tech is the only school in the state whose costs necessitate the maximum stipend for State Scholars.)

Smart Frosh

Among other statistics released were those of academic accomplishment. Forty-four frosh were the valedictorians of their high school classes, compared to fifty-nine last year.

The average score on the Verbal Section of the Scholastic Aptitude Test shows a small decline over previous classes, while that of the Mathematics shows a rise. The average scores for the Physics and the Advanced Math Achievement Tests are slightly higher than before. Chemistry and English scores lost a few points.

An average predicted GPA for all frosh is significantly higher than past years. This predicted GPA figure is computed for each freshman on the basis of his high school grades, CEEB scores, and other statistics.

Thespians Plan Year

Suppose you have been hauled into court because thirteen thousand six hundred and eighty-seven people were offended by the view of your exposed posterior. What would you do? Or suppose you were about to be cruelly evicted from your apartment and your wife was about to bear a child. How would you master the situation? Or suppose your wife, mother-in-law, maid, and cat all proved to be the arch-torments of your existence. How would you retain emotional equanimity?

The answers to these and other esoteric questions are to be had by appearing in Clubroom 1 in Winnett Student Center on Saturday, October 10, from 2 to 5 p.m., or Sunday, October 11, from 2 to 5 p.m., or Monday, October 12, from 7:30 to 9:30 p.m.

Equality

Right now you are probably asking yourself: what is happening in Clubroom 1 of Winnett Student Center at the aforementioned times? Be enlightened! The Caltech Drama Club inaugurates its 1964-65 season with readings to select the cast for three comedies by Georges Courteline: **Article 330**; **Hold On, Hortense**; and **Afraid to Fight**. For over half a century, the entire West Coast had waited for this premiere, and now the Caltech Drama Club brings it to you, live and in color.

Undergrads, grads, secretaries, faculty persons, males, females, Democrats, Republicans, Negroes, Caucasians will all be welcomed on an equal-opportunity basis. If you have read this far and still want more information, call Steven Morse at ext. 722 or SY 5-1794.

Contributors Keck, Lyon Die In August

Two of the men most instrumental in bringing Caltech to its present form died within a week this summer.

William M. Keck, Sr., industrialist and philanthropist, died August 20 at his home in Bel Air. He was the founder of the Superior Oil Company and donated funds for the graduate student house and engineering building which bear his name. In addition to his donations to Caltech, he had made large contributions to USC, Stanford, Pomona and Occidental.

Leonard S. Lyon, patent attorney and Caltech Board Member, died at his Los Angeles home August 13. He was a former president of the California Institute Research Foundation (holder of all Caltech patents), a member of California Institute Associates, and active contributor to the Caltech Development Fund.

Notices

USED UNIFORMS FOR SALE

Tan tropical worsted shirts and trousers are excellent for lab wear, durable and easily maintained. Call the Department of Air Science, ext. 558 or 559.

MILITANT CONSERVATIVES UNITE!

Anyone interested in joining a Caltech conservative club should see - either Max Bartlett, 23 Dabney, or Jim Gould, 57 Fleming, by Oct. 1.

Editorials

People

Traditionally this first editorial of the year is one of welcome and advice to freshmen. Well, frosh, you've heard a lot of advice this summer through the mail, and that's only a drop in the bucket of important things you'll hear at Camp this weekend. Those words from those who know what you're going to have to struggle through while you're here are not to be slighted, for being a student here is no easy matter, and you need all the help you can get. But it hardly seems worthwhile for us to add our iota to the pageant of advice; so we'll just say, "Welcome to Tech from the Tech."

But there is one thing that we should talk about. One of the trees that gets hidden in the forest of living here is people. When you find yourself wandering through the maze of this elaborately-conceived educational process, when you get bogged down and can't seem to do the simplest things right, when you find yourself spending too much time studying one thing with none left for another, remember that you're not alone. There are 204 other frosh, with whom you're being welded into a unified class, who have exactly the same problems you do, even if they won't always admit that. There is much, very much that can be gained from working problems together, from talking over ideas together, from howling damnations at all of life's obstacles together, and from just sitting and BSing together (if not carried to extremes).

And besides the enormous amount of talent lurking here in the form of ordinary students, some of the most fascinating people in the world (aside from women) are found on this campus, either permanently or as one-nighters. Most are fairly approachable, if you approach them in the right way: they are ready to help you and share their vast experience with you. In fact part of the large sum of money you pay each term supports these people, and if you neglect the faculty, special lectures, discussions, and concerts, you are really cheating yourself.

There are times during each term when you'll find this place so hateful that you'll think of splitting to Tahiti; but when you're away you'll probably often think of wanting to be back here again, just to encounter the individuals. So start right now—meet other frosh, meet the upperclassmen and faculty at Camp that were selected for what they can do for you, talk with them, listen to them. They are part of your great experience.

—Stuart Galley

From Other Campuses Glee Club Recruits

By Jace

Despite all the fan mail received over the summer, this column is back again—the Tech sorely needs fill. But cheer up—things could be worse (if you finish the column).

Even though all of you undoubtedly believe that Tech is starting about 12 months too

early (it is!), other schools have — believe it or not — already begun.

The University of Colorado is having a gay time with freshman initiation about now. With mock courts roaming the campus at all hours almost no one is safe. Witness the following accounts of the trial of several wayward frosh:

Froshly Sins

"As one sophomore vigilante told the Daily, they were generally charged with being a freshman' . . . Two hapless souls were awakened and queried by their sophomore nemesis, 'Why aren't you wearing your beanie?'"

"The pallid excuse that they had not known it was necessary to wear their beanies while sleeping did not pacify the dedicated minions of University tradition.

"About four men and twenty-six women were garnered by the relentless Inquisitors, charged, and duly sentenced.

"All, of course, were judged guilty, including one sophomore woman mistakenly caught in the dragnet. Undaunted the judges found her guilty of 'consorting with the enemy,' and she too met with swift retribution."

BY BOB SWEET

The Caltech Glee Club is now making plans to begin its twelfth season under the direction of Olaf Frodsham, a member of the faculty at Occidental College. This club has, over the past few years, done a great deal to spread the fame of our fair Institute far and wide. After touring California annually for some nine years, the club finally broke out of the state last spring for a quite successful tour through the midwest. Tentative plans are now being made for another such tour which should encompass the midwest and much of the east.

Tryouts

All students who like to sing, both graduate and undergraduate, are heartily invited to try out for the Club. The tryouts will be both private and painless. The schedule for these tryouts is as follows:

Sunday, Sept. 27 4:00—6:00 p.m.
7:00—9:00 p.m.
Monday, Sep. 28 4:00—6:00 p.m.
7:00—8:15 p.m.

The tryouts will all be held in the Glee Club Studio, which is in the basement of Fleming House. The first rehearsal of the new club will be Monday evening, the 28th, at 8:15 p.m. in the rehearsal room in Beckman.

(Continued on page 4)

Lecture Series In Beckman

This year's Caltech Lecture Series, in a major scheduling change from previous years, will be held in Beckman Auditorium on Monday evenings at 8:15, replacing the traditional Friday Evening Demonstration Lectures. The lectures, starting October 12, are open to the public and present a varied and interesting selection of subjects.

Dr. Ernest Watson, Professor Emeritus of Physics and former Dean of the Faculty at CIT, will give the first lecture, entitled "Liquid Air." This lecture has been so successful in previous years that occasionally Dr. Watson has had to give three successive performances in order to satisfy over-capacity crowds.

Other lectures scheduled for first term include "Flow of Blood in the Microcirculation," by Dr. Benjamin Zweifach, of the New York University Medical School (Oct. 19); "The Ranger Program," by Dr. William Pickering, Director of the Jet Propulsion Laboratory (Nov. 2); and "Some Elements of Effective Interpersonal Communication," by Dr. Carl Rogers, of the Western Behavioral Sciences Institute at La Jolla, California.

Four Research Grants Given

Caltech received three \$5,000 grants in the fields of pure mathematics and statistics, chemistry, and engineering for the 1964-65 academic year from the General Electric Foundation, it was announced last week. These grants were among 150 totaling \$650,000 distributed to more than 100 colleges and universities across the country.

Another grant received was from the Connecticut General Life Insurance Company. The company recognizes that colleges spend an estimated \$4,000 per student beyond that which is received in tuition and fees for a four-year period. Connecticut General seeks to provide the income a college would earn if it invested \$4,000 at four percent interest. That amount, \$160, is the size of a grant from the company.

to be enjoying themselves thoroughly.

They have good arrangements of almost all their songs, especially of "Maria," which is a significant improvement over the standard Kingston Trio version. They also each do a couple of songs by Travis Edmonston, of Bud and Travis. Joe sings "The Things I've Loved," and Eddie sings "I'm a Drifter." Both are really well-done.

The random patter during the

(Continued on page 4)



BY J. C. SIMPSON

For those of you who plan to have lots of spare time on your hands, the beginning-of-the-year fare at some of the area folk spots is really worth seeing.

The Troubadour has one of the better of its traditionally good shows. The headline act is Joe and Eddie, and they're as great as ever. Possibly the best reason for their success is their ability to put on an exciting show. They really throw themselves into all their songs and always appear

California Tech

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

Editors-in-Chief
Wally Oliver, Stuart Galley

Managing Editor
Norton Greenfeld

News Staff

Jim Austin, Andy Beveridge, Bob Gillon, Barton Gordon, Tim Hendrickson, Craig Nelson

Photographers: Phil Laipis, John Williams

Feature Staff

Bob Berry, Editor

Don Green, Phil Laipis, Bill Orr, John Rouse, Gary Schnuelle, Bob Schor, J. C. Simpson, Hank Suzukawa, Rodger Whitlock

Sports Staff

Gary Ratner, Editor

Peter Balint, Steve Blumsack, Larry Dillehay, J. K. Evans, Gary Ihas, David Jackson, Richard Landy, Ed Lee, Dave Seib

Business Staff

J. C. Simpson, Manager

Circulation: Stewart Davey

California Tech, 1201 East California Blvd., Pasadena, California 91109. Member of The Associated Collegiate Press. Represented nationally by National Advertising Service, Inc. Second Class postage paid at Pasadena, California. Printed by Bickley Printing Co. Subscriptions: \$1.50 per term, \$4.00 per year. Write: Circulation Manager.

Raisa Struchkova of the BOLSHOI BALLET with The Full Ballet Company and Orchestra of The Bolshoi Theatre, Moscow in The Full-Length Ballet by Sergei Prokofiev

Cinderella

ONE WEEK ONLY MATINEES WED., SAT., SUN. 2 P.M.

Co-Hit The Beryozka Dancers Springtime on the Volga

ESQUIRE 2670 E. Colorado

SY 3-6149 or MU 4-1774 Student Rates

WELCOME TO

The Campus Barber Shop

On the north side of Winnett Center west of Chandler Dining Hall

THREE BARBERS TO SERVE YOU

SPORTS

The Rat's Nest

Important Advice

Dear Frosh,

You may not appreciate this, but the old Rat is about to perform you a real service. For a starter you'll hear all the present Physical Education program. Then you'll learn how to get around it. We'll cap off with all the bitchin things you can do for no PE credit whatsoever, but have a ball anyway.

Hate to tell you this, but Frosh could have a rough time with PE. During the course of one year each frosh section is treated to exactly five weeks each of six different and exciting sports like weight lifting, wrestling, swimming, gymnastics, golf, and tennis. Most of these probably don't even turn you on. But the unwitting frosh is doomed to exactly this program, thirty weeks of real excitement.

Before I go on, however, I'd like to point out that this is an expenditure of only two hours a week and the coaching is excellent. In fact, the regular PE program is an excellent supplement to the Interhouse and Intercollegiate Athletic Program.

But I Digress

Caltech Intercollegiate Athletics is in a class by itself. You don't need to be experienced, athletic, smart, big, strong, fast, or good looking. All you really have to do is either want to play or want to get out of conventional PE. Satisfaction is guaranteed as no one is ever cut from a Caltech squad. We've got teams in all major sports, not to mention cricket. They aren't usually the best teams in the Southern California Intercollegiate Athletic Conference, but they probably have the most fun. No one at Caltech has been recruited to play and so competition is not exceptionally keen, but more than adequate for interest's sake.

Take frosh football, for example. Did you play in high school? No? Great! Neither did 17 out of last season's 22 frosh. Do you weigh over 200 pounds? No? Well, we had no 200-pounders on last year's frosh. Are you under 150? Yes? Well, we had a 120-pound safety on last year's squad (fast little mother). Well, I guess you meet all the qualifications.

Cool Sport

Frosh football offers you a fine opportunity to play for Caltech and earn varsity rating points for your House. In addition the season is a short three games long. It's over just before midterms and you're sitting pretty with no PE for the rest of the term. And frosh numerals to show off to your girl or mail home to your mother. What does it cost you? Ten hours a week of practice. Sounds like too much? It isn't. Caltech coaches are very understanding. If you must miss a day every now and then there's

no real sweat. You won't be cut. And just think: you may miss weight lifting.

Other frosh sports this term are equally inviting. Ever play water polo? Here's your chance to do it under the coaching of Webb Emery, whose varsity squad is always contending for the SCIAAC championship. (You should have seen the second Caltech-Oxy water polo game last year. They had us down two goals late in the last period. We tied it 3-3, but they scored again with only seconds remaining. Oxy was the only Conference team to beat us last year.) And you'd rather lift weights? You gotta be kidding.

Soccer Inna Mout

How about soccer? We have one of the finest teams in Southern California, even if UCLA and its 20,000 students did beat us 2-1 at their home field last year. And coach Andrews is really a gas. Grad students are eligible so you'll probably have to settle for a place on the JV squad.

Like to run? Try frosh cross country and become physically fit, mentally awake, and morally straight.

The intercollegiate parade marches on and on through second and third term, including wrestling, swimming, track, basketball, baseball, golf, and ten-

nis. More on these in later columns.

If you really don't like to play intercollegiate sports you can meet your PE obligation as a manager. Basically, this amounts to keeping track of equipment and attendance, or assisting in time keeping. You travel with the team and get delicious training table goodies at the Greasy or at the special dining hall. This often includes steak-and-eggs breakfasts. Coach Emery is currently looking for three managers to cover both water polo and swimming. Also, there is only one football manager at the present time.

In General

Let me add a few thoughts on Intercollegiate Sports in general. Nearly all teams are short handed despite the fact that more than one in every three undergraduates participates. The chance of making a starting frosh squad is great, and you're bound to see action anyway. Frequently frosh football can not field enough men to scrimmage, and this situation may well apply to this year's varsity. Any help will be sincerely appreciated. If you're at all interested, talk to the coach involved and/or some of the players. They'll be very glad to help and explain exactly what will be ex-

pected of you.

The second noblest way to meet your PE requirement is the Interhouse sports program. This is just what it says. One merely tells his PE coach that he's going to play Interhouse for however long the sport lasts and then is excused from his regular classes in PE to attend practices and games against other Houses. Once again, the competition isn't very stiff and frosh can easily obtain a starting position. The rivalry is intense and the program is well managed by Coach Jim Nerrie. First-term sports consist of softball and swimming. Later there are football (touch), track, volleyball, tennis, and basketball. This is a fine chance to participate in organized sports, serve your House, and avoid weight lifting.

Water Bugs

For the really athletically inclined frosh I'd like to point out some fine opportunities for non-credit, recreational activities. If you haven't lived in California before you've probably never thought about surfing and sailing. Not only are these sports readily available but Caltech has clubs in both of these fine outdoor activities. Watch this column for more on these. During the winter months skiing is not too tough to arrange, and in fact

there is an Interhouse ski meet which was revived last year. There are many mountain climbers on campus and suitable mountains are close at hand. Most Houses have inter-alley or inter-class athletic competition. You'll probably hear about Discobolus, the interhouse challenge trophy for which you don't get PE credit, but have a ball anyway.

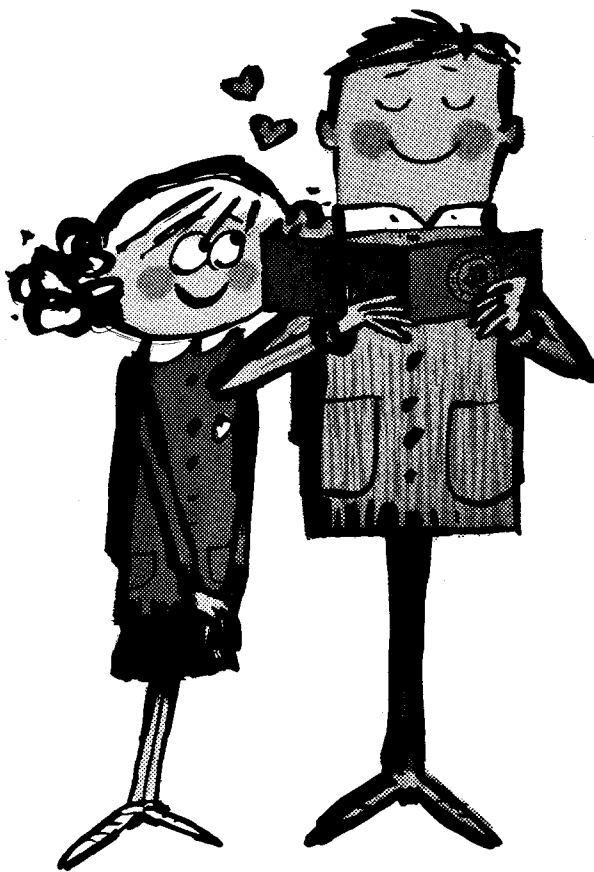
Not much more I can add. If you're at all interested, talk to the coaches up at camp or confer in your discussion groups with friendly upperclassmen and faculty members. Try to get an idea just how little a frosh intercollegiate sport cuts into your time, and just what there is to be gained. Ask around and see how few students have regretted non-conventional PE participation.

Really, fellows, your help is needed by our frosh teams and wanted by your House; and you don't want to take weight lifting anyway. The surfing and sailing clubs need members. Also, the California Tech needs sports writers. You may have been able to guess by now that I can't write.

The Ole Rat

(Sports Editor)

Like to see your name in print?

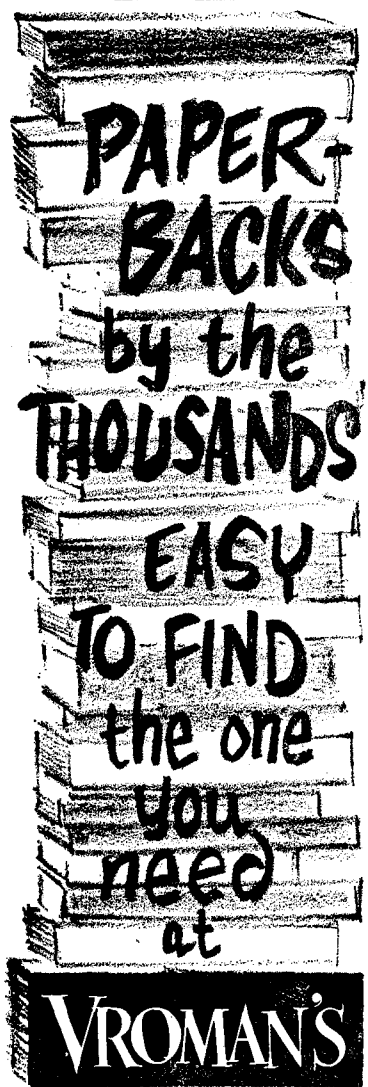


Open a Bank of America checking account—and all your checks will be imprinted with your name and address. A Bank of America checking account means top protection for your money. Your cancelled check is your receipt for a paid bill. Also available is our economical Tenplan checking account where you pay only for the checks you write. There's no other charge. Open your account today.

BANK OF AMERICA

NATIONAL TRUST AND SAVINGS ASSOCIATION • MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

PLEASANT HILL BRANCH • 2312 MONUMENT BOULEVARD, PLEASANT HILL



695 E. Colorado Blvd., Pasadena
Sy 3-1171 Mu 1-6669

FRENCH SPANISH GERMAN
RUSSIAN ITALIAN JAPANESE

THE BERLITZ SCHOOL OF LANGUAGES

PASADENA, 170 SOUTH LAKE AVE., SYcamore 5-5888

PRIVATE INSTRUCTION

SMALL CLASSES STARTING NOW

Native Teachers Day or Evening Free Trial Lessons

More Frets

(Continued from page 2)

act is also lively, and they each get in a few good cuts at Goldwater before singing "Oh, Freedom," a civil war song.

With Joe and Eddie is Gale Garnett, a female Hoyt Axton who was at the Ice House a few weeks ago. According to the invitation, however, she is making her official RCA recording star premiere at the Troubadour now — although they're not recording.

At any rate she is excellent, although she didn't get too good a reception from the audience there, which is surprising since I saw her at the Ice House and

of songs; some of the better ones are "We'll Sing in the Sunshine" and "I Know Where I'm Going." she got tremendous applause for just about every song.

She has a very deep voice, but she sings well and chooses her songs well to suit her voice. She has good arrangements of a lot

More Glee

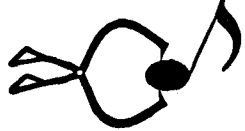
(Continued from page 2)

In a move to encourage new students to try out for the club, the Glee Club is this year invading New Student Camp, long a bastion of the renowned Cal-

tech Band and Ed Bloomberg. Here, with a little help from upperclass Club members, frosh songsters should do much to liven up even more the already lively Grand Amalgamated Concert and Talent Show. Mr. Frodsham has chosen such works as

the Faure Requiem and Bruckner's Mass to be sung for the program. When asked if these weren't perhaps a bit heavy for the boys to pick up in the three hours rehearsal time, he replied, "Oh, no sweat; we'll let them use music."

Beethoven's 32 PIANO SONATAS
 PLAYED BY
LILLIAN STEUBER
 7 Sunday Concerts, Starting Oct. 11th, 1:30 p.m.
 Series Tickets Now: \$15, \$22.50—Students (Under 25) \$10
 AIR CONDITIONED
ESQUIRE THEATRE SY 3-6140 • MU 4-1774
 2670 East Colorado Blvd.
Order Series Tickets NOW

 **THEY'RE BACK!!**
 The "New Frankie & Johnnie" gang,
THE GREENWOOD COUNTY SINGERS
 with their new hit, "CAKE WALKIN' BABY"
Starting Sept. 29th **2 weeks only**
at the ICE HOUSE
 Pasadena MU 1-9942



Advt. of Falstaff Brewing Corp. of San Jose, Calif., in grateful tribute to Military Preparedness, playful evenings at home & Great Beer.