

Drama Club Presents Three Plays

The Caltech Drama Club's Arena Players will present three one act plays—Shaw's "The Prologue to Androcles and the Lion," "The Boor" by Chekov, and Christopher Fay's "Phoenix Too Frequent"—tomorrow night at 8:30 in Culberson Hall.

Friday's will be the third performance of a program to which typical reaction has been "Good, I liked it," and "a riot." The curtain raiser, Shaw's "Prologue to Androcles and the Lion", presents Stu Goff as Androcles, a henpecked Roman Christian who takes pity on a lion, played by Ken Dinwiddie, removes the "thorn in its tootsum wootsums", and dances off through the forest with the lion, leaving Muriel Harvey, as his raving wife, behind.

"The Boor" by Chekov is a delightful battle of the sexes (John Conover — male; Norma Aagaard—female) between Mrs. Popov, a "faithful" widow, and Grigori Stephenovich Smirnov, a creditor of the late Mr. Popov. Conover turns in an outstanding performance as he stomps about, demanding his money, threatening to grind to dust the servant Luka, played by Mike Peters,

(Continued on page 2)

Glee Club Trials Set for Today

Final auditions will be held today at 11 a.m. and 4 p.m. in Culbertson for the Caltech Glee Club, according to Eldridge Moores, club president.

All interested frosh are urged to try out, especially baritones and tenors.

Olaf Frodsham directs the club, which has been acclaimed one of the outstanding organizations of its type on the West Coast. A trip to San Francisco is planned for spring term.

Patience Rewarded

Three Techmen Find Bright, New Toy

Three Techmen learned the virtue of patience last Friday. Frank Childs, Frank Greenman, and Norris Huse waited over four hours for the air to escape from an eight-foot rubberized canvass beach ball that was sitting on Whittier's football field.

The big ball, they had discovered earlier, is batted around once a year by contending teams of freshmen and sophomores, and the Techmen had begun their vigil as soon as the boys from Whittier left the ball to deflate itself for winter storage.

The Techmen were briefly routed by a spy-happy football coach, but were not daunted. At last the ball lay in a crumpled mound at their feet; the moment of truth was at hand.

Muttering "Ball Paul . . ." under their breath, the three lifted the deflated sphere into Childs' convertible and purred

Announcement

STUDENTS' DAY CHAIRMAN

Seniors interested in becoming chairman of Students' Day should apply to Dave Spencer in Fleming. The BOD will make the final selection Monday, October 13.

BIG T's

Last year's Big T's are available in the book store. The price is \$6. Undergrads who did not receive their copies should contact Lew Linson.

Tuition Hike Announced

Annual tuition charges for undergraduate and graduate students at Caltech will be increased from \$900 to \$1275 beginning one year from now (Sept. 1959), it was publicly announced today by President L. A. DuBridge.

The increase was voted by the Board of Trustees, he said, in order to meet steadily rising costs of education at the Institute.

He added that in order to reduce financial strain on students and their families to a minimum, the trustees adopted a new deferred payment plan by which tuition charges may be paid in monthly installments over a substantial number of years.

Dr. DuBridge said also: "The rapid rise in the number of scholarships available to Caltech students leads the faculty, administration and trustees to believe that even with the new tuition rates no student will be excluded from Caltech for financial reasons alone."

The deferred payment plan, which Caltech officials believe in the most attractive such plan offered by an educational institution, was developed with the cooperation of the California Bank and provides two kinds of loans

(Continued on page 5)

"New" New Student Camp Rated Enjoyable Success

Faculty Praises Informality

The new New Student Camp, held last weekend, is being hailed by all observers as a success. The new camp format, based on the small, informal discussion groups that replaced most of the faculty and student talks, was the result of work done by an ASCIT committee last year.

Successful Experiment

Dean Foster Strong labeled the camp "a successful experiment" and suggested that more extensive evaluations be carried out.

Dean L. W. Jones commented that he enjoyed the camp much more than he had in previous years. He said that he felt the informality helped the freshmen to ask more questions and participate more in the discussions.

Camp planning committee co-chairmen John Everitt and Keith Brown both said they were happy with the way the new camp was received by the students and faculty and expressed hopes that the new program would be adopted permanently.

Evaluation Planned

ASCIT President Mike Godfrey also expressed his satisfaction with the camp and promised that the BOD would make plans for its formal evaluation.

In addition to the new discussion groups frosh, transfer students, upperclassmen and faculty at the camp also participated in one of the best talent shows the camp has seen, staff-frosh football and volley ball and an intercabin volleyball tournament as well as more informal activities.



Questions and answers spark discussion in one of 22 groups at student camp.

Frosh To Meet Girls; Beach Lures "Elders"

About 200 college freshman and high school senior girls will be on the Caltech campus Sunday for the Annual Freshman Tea Dance, according to Dance Chairman Lou Toth.

"They're the cream of the crop," said Toth, describing his imports from Scripps, Los Angeles County Hospital, Good Samaritan Hospital and the local high schools.

Academic Honors Told For 1958

Honor Standings for last year have been awarded to 74 upperclassmen and Honors at Entrance to seven freshmen.

This year's seniors receiving honor standing were: Vladimir Baicher, Keith Brown, Clark Carroll, Bob Chandos, Hung Cheng, Barry Clark, Bob Doyle, Francis Groesbeck, Dave Handel, Jim Havey, Dick Johnson, Jerry Keisler, Bob Lange, Dave Luenberger, Carl Maltz, Gail Massey, Mike Milder, Eldridge Moores, Tom Morton, John Peterson, Russ Pitzer, Stan Roth, Ed Seltzer, John Schuster, Steve Schwartz, John Stack, Ivo Tammaru, John Teal and Bob Thornton.

Juniors earning the same plaudits were: Don Anderson, Tom Bergstresser, Neville Black, Tom Bowman, Dave Cassel, Joe Cauley, Lowell Clark, Brad Eason, Jerry Jantscher, Al Hales, Bob Koh, John Munson, Jim Nearing, Mel Neville, Pete Rony, Bill Sinoff, Bill Smith, Steve Stephens, Lou Toth and Howard Weisberg.

Honor Standing sophomores include: Bill Bauer, Dave Bowman, Larry Brown, Ben Burke, Eli Chernow, Ed Evans, Bent Huld, Jerry Kasper, Stan Klein, Dave Kendle, Dave Loebbaka, Bob Long, Art Ludwig, Steve Luner, Keith Mathews, Cleve Moler, Richard Norman, Bob Poe, Mike Schwab, Larry Shampine, Harold Stark, Henry Thieson, Dick Thompson, Ortwin Wersel and Clyde Zaidens.

These awards are given to all students compiling a 3.4 GPA or better during the year.

(Continued on page 5)

Scheduled for 2 p.m., the dance will be held in the Dabney Hall Lounge and Gardens with music by Lloyd Kamins' five-piece band. Ollie Seely is in charge of the intermission program.

Transportation to the ASCIT-YMCA sponsored dance for the girls will be furnished by freshmen owning cars. Girls will wear Sunday best and Caltech frosh should wear slacks, coat and tie.

Huntington Beach Splash

Upper class social functions will also get off to a roaring start Sunday, according to Stan Sajdera.

Class officers of the sophomore, junior and senior classes have planned a stag or drag, bring-your-own-food beach party to be held at the Huntington Beach from 10:00 a.m. on.

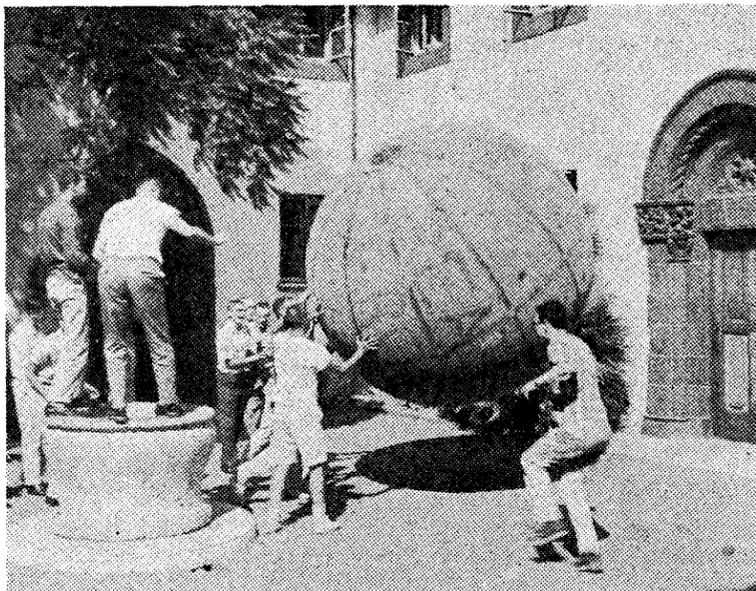
Sajdera, Soph president, hinted that this is just a prelude to more vigorous class social programs, especially on the part of the sophomore class.

BOD to Fill Frosh Posts

Freshman class officers will be appointed next Thursday, according to BOD members.

The appointments will not be announced until about 9:00 p.m., or after the completion of rotation activities, in order to protect both the freshmen and Houses from undue pressure. Immediately after the assignment of offices, the freshmen will find out to what House they are to belong.

To be appointed are a freshman president, vice-president, secretary, treasurer, athletic manager and two BOC representatives.



Techmen, take a protective interest in their new toy, a gift from Whittier.

away down the road.

Back at Tech after their triumphal exploit, the three patient Techmen were running

true to form: they were patiently waiting for the paint to dry on a big red "T" that newly decorated the ball.

Fifth Column

By Brad Efron

Ahhh, freshmen, ahhh exuberance, ahhh spirit, ahhh Hell. You'll excuse the bitter note, but I'm afraid I've got those "rotation-time-my-lips-are-chapped-from-smiling-blues." Actually, our freshmen seem to be a quite passable group of guys (though freshmen.) However, their education has been sadly neglected in one vital way. To wit: upperclass cynicism has not been allowed to do its dirty work. If this keeps up we'll have satisfied people on our hands. After that, who knows? Maybe even blatant happiness. So, following a heated competition (Boy Scout kicking), I've been chosen to deliver this year's lecture on Cynicism on a Stick.

First, there are a few facts that I feel it is my duty to pass on:

1. There are actually 800 freshmen. 80% flunk out after the first three chem labs.

2. Next term all textbooks will be in Sanskrit Pig-Latin.

3. While you study 80 hours a week to protect the U. S., greasy hoods back home are stealing your women (that fact courtesy of Tokyo Rose and Dean Strong.)

4. You've been the victims of a gigantic hoax. You're actually in the **bottom** one per-cent of all college freshmen.

Now that we're all in the proper frame of mind (disgruntled) let's talk about another very important subject: getting even with the world. The wise freshman will see the folly in striking out blindly in all directions, though I'll admit it's pleasant enough racking up innocent bystanders. Much more effective is the planned, dirty campaign, which hits hardest at those who know and trust you. A typical campaign runs somewhat like this:

1. Turn in your T.A. Organize a mass march of your section to

the Dean's office. Incompetance is the usual charge, but drinking and moral turpitude are just as effective, and show more imagination on the part of the snitcher.

2. Turn in your buddy. A forged paper, a sly word to the BOC, that's all it takes. You'll fix his little red wagon.

3. Make the upperclassmen miserable. This is not nearly as easy as the previous points, since most of them are miserable already. However, Rotation is the perfect time for mind-warping psychological tricks. For instance, here's a good opening line you can use when entering a new house, (delivered with a toothy smile and while pumping the hand of the house president vigorously) "Boy, the guys may be lousy here, but the name tags are just the niftiest!"

I'm sure the quick minds of our freshmen will be able to improvise successfully on the meagre material I have presented here. Remember, it's not what you do that counts, but rather whom you do in.



Fry

"Would you like a rubber band?"

Editorial

Admonition To The Frosh: Take Rotation Seriously

Successful Student House rotation has always depended on a principle that is duly reaffirmed by the Interhouse Committee each year: **No student shall actively or passively resist rotation.** Everyone agrees that this rule is essential, although most are vague about its detailed interpretation, and few would venture to invoke the rule against a "violator."

As a matter of fact, the rule is not important as a statute but as a statement of the spirit with which freshmen should approach rotation: they should show a sincere desire to make a careful, well-informed judgment of the four Houses.

In other words, at the end of two weeks each freshman should have formed a fair picture of the character of each House, together with an evaluation of each in terms of his own needs. The fact that most House residents find that a year or more is required before they can perform this task to their own satisfaction emphasizes the care and diligence freshmen should apply to the task during rotation.

To those who are convinced that the Houses are essentially the same, we state that there are prominent differences between them; perhaps the observers are not clever enough to discern the differences, or else the upperclassmen are clever enough to conceal some of them. The importance of these differences is a personal matter; but their existence should not be ignored.

We are told that typically 80% of the freshmen who are assigned to a House at the start of rotation remain in that House afterward. If we can conclude anything from this fact, it is that most freshmen choose their House on the basis of the friendships they have made in that House during the two weeks of rotation. A wiser decision must be arrived at on the basis of friendships that can be made over the following several years. It is true that many House residents could be happy and make rewarding friendships in any of the Houses, but each freshman owes it to himself to make sure he will be satisfied with the House he chooses.

Hit One-Act Plays to Close Tomorrow

(Continued from page 1)

and finally teaching Mrs. Popov how to use pistols so she may answer his challenge to a duel.

Fry's "Phoenix Too Frequent", certainly the most difficult of the three plays, demonstrated again the surprising quality enthusiasm and hard work can produce. John Conover, Janelyn Ranells, and Muriel Harvey teamed up to present this tale of a Roman soldier's seduction of a widow from the grave, aided by the widow's attendant and, somewhat unexpectedly, by her late husband.

This production and this summer's production of Miller's "All My Sons", which played to some 1800 Pasadenians and in which, according to director George Stephens, "Ken Dinwiddie and Bob Blandford did extraordinary jobs," are the spontaneous outgrowths of Caltech men's enthusiasm. It began with last spring's smash, "Remains To Be Seen." With a nucleus of Conover, Dinwiddie, and Goff, the idea of a summer production, and then tomorrow night's effort, took shape.

The future of student drama at Caltech is very encouraging, according to director Stephens. "Each of these productions has been an artistic success — through sheer hard work. Caltech men did a superb job. This is a solid, healthy movement on campus and could prove to be a significant force in student life."



Norma Aagaard dazzles John Conover in a scene from "The Moor" by Chekov.

DANCING

IMPROVEMENT INSTRUCTIONS

Private — 3.75
Group — 1.50

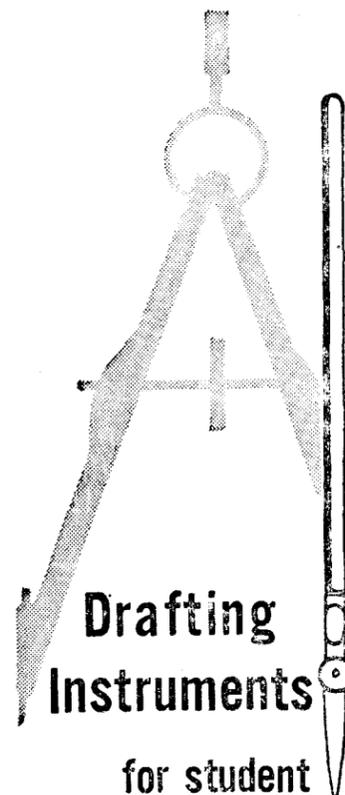
Call for Information

ROBERT BAKER

DANCE STUDIO

1212 E. Green St.

SY. 5-4267



Drafting Instruments

for student and professional engineers, architects, draftsmen

- Drawing Sets 9.75 to 38.00
- Compasses 2.95 to 5.95
- Dividers 3.25 to 5.95
- Ruling Pens 1.35 to 11.00
- Drawing Boards 1.85 to 13.15
- T-Squares 1.05 to 7.00
- Angles, French Curves, Templates 85c to 4.85
- Ames Lettering Guides 1.00
- Mechanical Drafting Pencils 1.50 & 1.95
- Slide Rules; Pickett & Eckel, K & E Log Log Duplex 5.95 to 26.25

Free Parking—Enter from Union St.

Open Monday and Friday until 9 P.M.

SYCAMORE 3-1171
RYAN 1-6669



695 EAST COLORADO ST., PASADENA

The California Tech

EDITOR: Mike Milder

EDITORIAL BOARD: Bill Bauer, Cleve Moler, John Todoroff, Howard Weisberg.

STAFF

Bruce Allesina, Ted Bate, Carl Gottschall, Gerhard Klose, Sid Leibovich, Bob Norton, Stan Sajdera, Harry Spertus, Jim Uleman.

BUSINESS MANAGER: Howard Weisberg

Circulation: Neil Sheeley

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

Frosh Camp: Review In Pictures



LEFT: Caltech President Lee A. DuBridge gathers the usual flock of new students after his welcoming speech.



RIGHT: Impromptu moonlight parade after the Talent Show highlights the exuberance of this year's freshman class.



LEFT: Upperclassmen Everett, Thompson, and Wilkinson gather for a high-level progress conference between discussion periods.



RIGHT: Upperclassmen entertain with a morality skit at the annual Talent Show.

THEY SAID IT COULDN'T BE DONE *BUT HERE IT IS!*



"Couldn't be done." That's what they told Mr. Bell back in 1876. But where would three million college students be without the telephone... especially on a Saturday night? Today you can make a date, or talk to your folks, from practically anywhere... even from your own car.

**PUFF BY PUFF
TODAY'S L&M
GIVES YOU-**

Less tars & More taste

DON'T SETTLE FOR ONE WITHOUT THE OTHER. CHANGE TO L&M AND GET 'EM BOTH.

Such an improved filter and more taste! Yes, today's L&M combines these two essentials of modern smoking enjoyment - less tars and more taste in one great cigarette. L&M's patented filtering process enables today's L&M to give you, puff by puff, less tars in the smoke than ever before. And L&M gives you *more taste, better taste* than any other cigarette.



Light into that Live Modern flavor!

Heard From The Wings

Prof's Novel Called 'Accurate but Lifeless'

By Joel Yellin

Of great interest on campus is J. Kent Clark's newly published historical novel, **The King's Agent** (Charles Scribner's Sons, \$3.95). Dr. Clark is Associate Professor of English at the Institute.

The King's Agent deals with the period of English history beginning with the reign of James II and ending just after the crowning of the first Hanoverian. Dr. Clark is obviously intimately acquainted with the historical detail and must have done a great deal of research. However, the result of his labor is a historical dissertation only thinly covered by the veneer of a weak plot.

Academic Writing

The situations are ultra-conventional, indeed they are most often lifeless. The characters are blatantly superficial. The general impression left on the reader is one of pure exposition, unsullied with either flights into poetic fancy or searching illumi-



nation of the problems of the time and the people.

The form of the dialogue is strange also; the characters speak twentieth century English interspersed with seventeenth

century slang. All in all, **The King's Agent** presents an accurate picture of a turbulent period; farther than this it does not go.

* * *

Plays to see at the moment: **Visit to a Small Planet**, opening Thursday at the Pasadena Playhouse (I'll review this next week), and **View From the Bridge**, by Arthur Miller, now at the Player's Ring.

Recommendation for an unusual recording of great beauty: the original cutting (now on Columbia LP) of Bidu Sayao singing the *Bachianas Brasileiras* No. 5 by Villa Lobos. This piece alone is worth the price of the recording. Also included are five Puccini arias, (*Un bel di*, Mimi's waltz song,) and twelve very lovely Brazilian folk songs.

Jazz Beat



by Lloyd Kamins

Arranged by Montrose

Pacific Jazz PJ-1214
The Bob Gordon Quintet, featuring: Bob Gordon, baritone; Jack Montrose, tenor; Paul Moer, piano; Joe Mondragon, bass; Billy Schneider, drums. The Clifford Brown Ensemble, featuring: Clifford Brown, trumpet; Zoot Sims, tenor; Bob Gordon, baritone; Stu Williamson, valve-trombone; Russ Freeman, piano; Carson Smith or Joe Mondragon, bass; Shelly Manne, drums. Arrangements by Jack Montrose

This album supposedly presents the intricate arrangements of Jack Montrose, performed by a host of excellent soloists. Such

is not the case. Rather, the album serves to point out the great discrepancies between the "West Coast" school of jazz and the main-liners.

I see absolutely no reason to give title credit for such banal arrangements. The arrangements aren't extremely bad; they are just wholly uninteresting, with few exceptions. They are perfectly standard, as if they were stamped out of the mold used by Howard Rumsey. (What poor choice of molds!) A few gimmicks are used, but they are too obviously employed in exactly that sense. There is no musical worth in the arrangements.

On most tracks this lack of artistic qualities is to be expected as the choice of songs is deplorable, but on a few sides there is a grave loss. The three Clifford Brown originals, *Daahoud*, *Joy Spring* and the capricious *Tiny Capers*, are excellent tunes and deserve better treatment. In these cases, the musical worth would have been greatly improved if Brownie would have taken single line solos on the themes, and left the rest of the group to mess up their own solos.

Ah, yes, the solos. Brown is great. He's always great. His phrasing, his agility, his inventiveness, his speed, all are in evidence. The overall effect, however, is one of comedy. It sounds as if a professional musician were sitting in with a bunch of kids who were primarily employed in shoving each other away from the microphone.

With the exception of some very good work by Zoot Sims, the remainder of the solos are totally meaningless. They are barren of emotion and imagination and are poorly displayed in contrast to the swinging contributions of the main-liner, Clifford Brown (Brown is sired by Dizzy, out of Fats Navarro).

There is one superlative contribution by Montrose, *For Sue*. This track is intensely beautiful. The theme, a very slow blues, is a soulful cry of bereavement, lonely and estranged. The mood is inescapable, it settles upon the room like a black velvet cloak. *For Sue* is mesmerically beautiful.

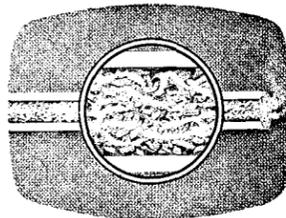
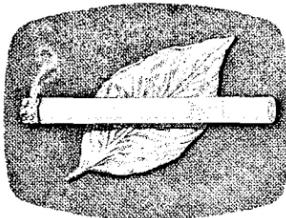
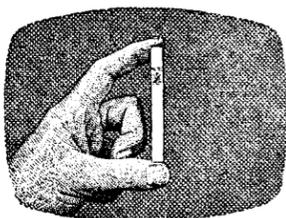
GET SATISFYING FLAVOR...
So friendly to your taste!

No flat "filtered-out" flavor!
No dry "smoked-out" taste!



You can light either end!

See how Pall Mall's greater length of fine tobaccos filters the smoke and makes it mild—but does not filter out that satisfying flavor!



FOR FLAVOR AND MILDNESS, FINE TOBACCO FILTERS BEST

1 You get greater length of the finest tobaccos money can buy 2 Pall Mall's greater length filters the smoke naturally... 3 Filters it over, under, around and through Pall Mall's fine tobaccos!

Outstanding...and they are Mild!

Product of The American Tobacco Company—"Tobacco is our middle name"

Lonely?

Inadequate?

Let us give you a

NEW PERSONALITY

Work on

THE CALIFORNIA

TECH

Monday night in

Lower Fleming

Pit and Paddock

By Bob Norton

The big news in sports car circles for the last month has been the upcoming race at Riverside on October 12 and the repercussions this race is creating in American sports car racing. The race itself is sanctioned by the United States Auto Club, approved by the FIA, the international sanctioning body, and is listed on the international calendar.

USAC, the organization which controls most American professional racing, has announced the formation of a road-racing division. Fortunately, the race is sponsored by the Los Angeles Times, which gives the race much publicity.

Entries for the race are quite distinguished, with Stirling Moss heading the list in a 4.5 Maserati. Lance Reventlow has entered three cars to be driven by himself, Chuck Daigh, and possibly Bruce Kessler. Two 4.1 Ferraris are entered: one by Richie Ginther and a very special lightweight 4.1 just completed by the factory for Phil Hill. The Aston Martin factory has entered two cars; one a 3.0 DBR-1 for Roy Salvadori and the other a 3.7 DBR-21 to be driven by Bob Oker. Two other top threats are Carroll Shelby in a 4.5 Maserati and Dan Gurney in a 4.9 Ferrari.

Of almost as much interest as the race itself are the conflicts that the mere existence of this race is causing. The California Sports Car Club (CSCC), announced that any of their members could race in any amateur race held in conjunction with

USAC races, while the Sports Car Club of America (SCCA) continued its policy of banning anybody who ran with or in a professional sports car race by barring CSCC members from racing in SCCA events because it considers the CSCC a professional sports car racing club.

Some promoters of West Coast sports car racing, aghast at the ensuing prospect of lack of SCCA name drivers, decided to run CSCC races instead, primarily at Laguna Seca and Palm Springs. The San Francisco and San Diego regions of the SCCA, afraid they might lose their race courses, decided to reject the national SCCA ruling by announcing that any of their members could race in CSCC, USAC, or FIA events.

Things are still developing fast, but it appears that the SCCA will continue with its inflexible policy and will degenerate into a small club devoted to the rich snob who likes to go out on the course and drive around in his \$20,000 machine without any competition from the vulgar professionals. Fortunately the CSCC is showing a little thinking in their enlightened viewpoint.

CAMPUS BREWINS

In wandering around campus and observing the new men, it came to the attention of Beak that there are a few unenlightened men on campus who don't really know who the Beak is or what he does.

At camp you heard that the Dean of Students was the most important man on campus but alas how can a learned man be so wrong. The Beak is the most important man on campus with the biggest job of all. The Beak's sole purpose in life is to guard and protect the moral life of the

Caltwitch. Beak has found that this is best done by bringing to the students examples of people who have gone astray. Thus by example you the Caltwitch can learn the many pitfalls of life.

Mexican Nairless

Yea, it will be written in the scripture of the poor hairy lamb one Darb L. Brown whost did venture down the sacred arroyo to the Pershing Square mit out der longenpants on. There did the voice of a brown angel boom forth bringing to him tidings of the beauty of his legs and with the royal command that he shoudst annoint them with Nair.

Weir's Queers

Be frank now is an elephant blue or red Our dear sweet Frosh have been asked such questions as these by campus paranoid Dr. Weir. Beak does hope that these dear sweet little lambs have not been lead astray by questions about the availability of their mother between the ages of 6 and 8.

Frosh Score on College Boards

"We've always had the highest average freshman class scores in the country on the College Board tests, and this year is no exception," said Dean L. W. Jones while discussing this year's Frosh. "In fact, the scores are somewhat higher this year than in previous ones."

Average scores for the 201 entering freshmen were: SAT Verbal, 668; SAT Math, 754; physics achievement, 693; advanced math achievement, 766; chemistry achievement, 724; English achievement, 647.



By "Monty"

with Steve Langley

Rotation is here and with rotation comes a certain amount of sociability. Old students meet new and most manage to have a drink. For those who have more than a few, some morning-after suggestions are in order.

For the stomach which wants to die, try a medium-rare hamburger patty with tobasco sauce. After the initial shock things will look brighter and you may decide to live.

A quick relief for the aching head is equal parts tomato juice and beer, taken in with more tobasco. The juice has vitamins, the beer has alcohol, which soothes, and tobasco lets you know it's there.

If neither of these valuable solutions aid, then it is respectfully suggested that you drop drinking altogether, or, less drastic, start in again until your problem is too fuzzy to worry about.

Tuition Hike

(Continued from page 1)

and repayment schedules, as follows:

1. A student may borrow up to \$1270 a year for four years. Beginning with the month after signing for the loan, he will repay at the rate of \$50 per month and will pay off the loan over a period of 10 years. The interest rate will be 5 percent per annum on the unpaid balance.

2. A student may borrow \$900 a year for four years. During his four undergraduate years he will pay interest only. After graduation, he will repay at a minimum rate of \$50 per month, and will pay off the loan over a period of about eight years.

Dr. DuBridge said that Caltech will also avail itself of the recently announced federal loans providing for long term tuition payments.

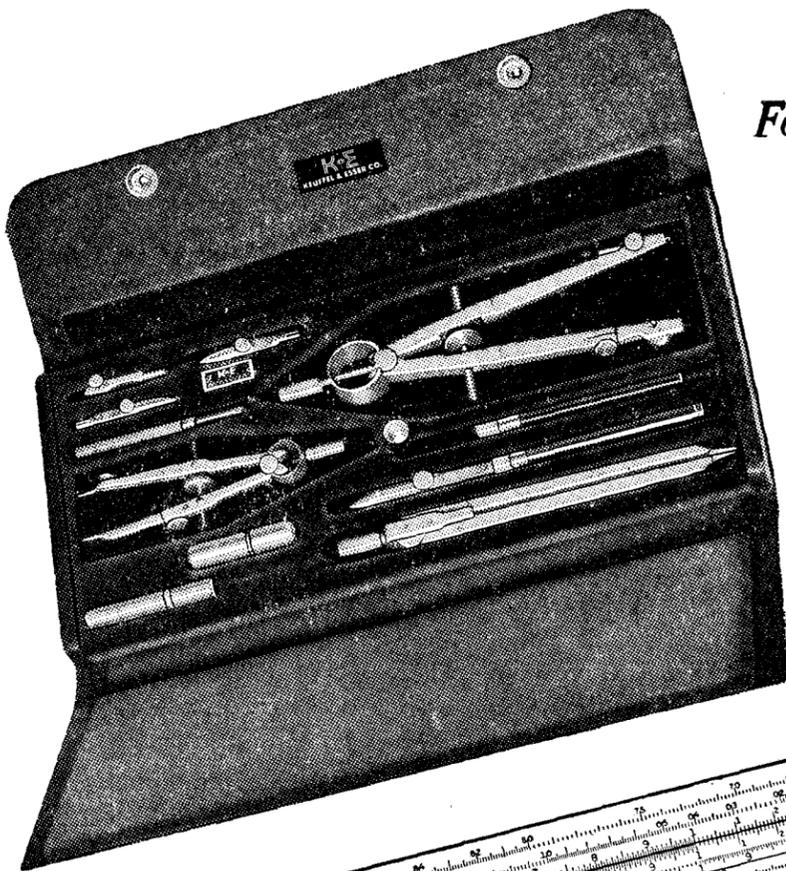
Honor Standing

(Continued from page 1)

Dean L. W. Jones pointed out that due to a printing error, this list was incomplete in the catalog.

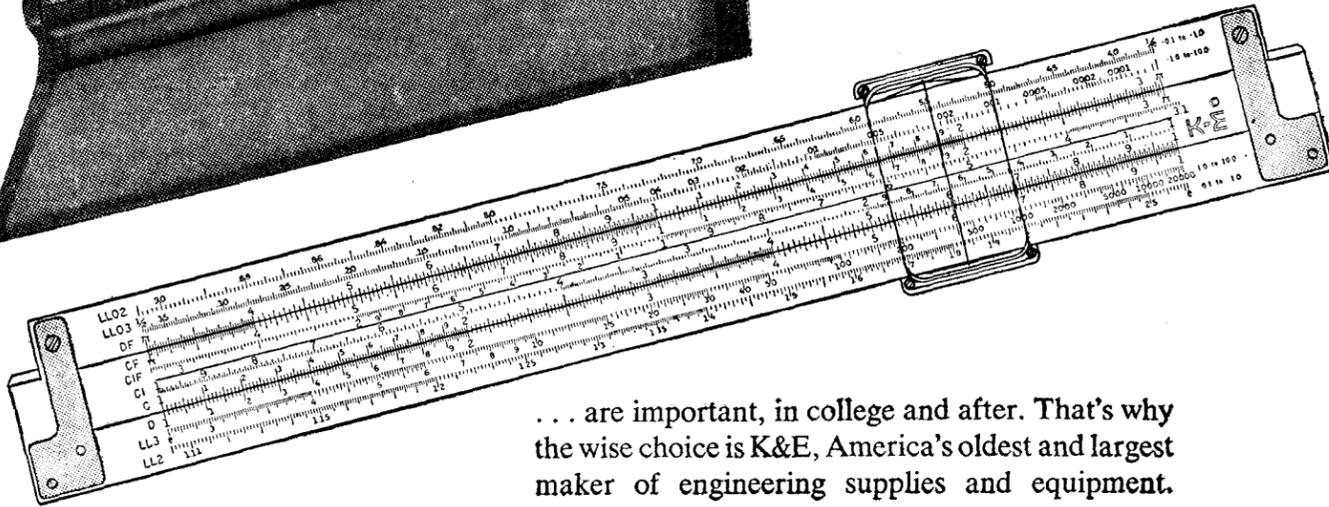
The seven freshmen are: Stephen W. Bruenn, Riverdale, New York; Marshall D. Buck, Santa Monica, California; Peter C. Ford, Watsonville, California; Neil Gretskey, Dorchester, Massachusetts; Andy Kukla, Los Angeles, California; Kip S. Thorne, Logan, Utah and William H. Weihofen, Albuquerque, New Mexico.

The awards were based upon exceptionally high scores on the College Entrance Examination Board tests.



For engineering freshmen...

drawing instruments and slide rules



... are important, in college and after. That's why the wise choice is K&E, America's oldest and largest maker of engineering supplies and equipment.

When it comes to Slide Rules... take the K&E Decitrig®:

Its versatile scales team up to give faster solutions of complex problems. A dual purpose D scale and three LL scales cover a log log range of 1.00... to 22,000. And the A-B scales make quick, non-stop work of square root derivations. Sharp, engine-divided graduations permit accurate readings in a hurry.

And... look at K&E Drawing Instruments.

But remember, there's more to drawing instruments than the way they look. It's the important "extras," such as accuracy, materials, workmanship, manufacturer's reputation, that determine genuine value. Every K&E set—and they come in a wide price range—offers you the "extra" features that mean extra value.

"Your K&E College Buying Guide"—

will give you useful information on the materials you'll need for your engineering courses... 36 pages, with plenty of pictures, and handy check-list. Get it at your college store.



KEUFFEL & ESSER CO.

New York • Hoboken, N. J. • Detroit • Chicago • St. Louis • Dallas • San Francisco • Los Angeles • Seattle • Montreal

Gridiron Opener Sat. At LaVerne

Beavers Face Weight, Experience; Stars Newman, Conover, Pitzer Return

This Saturday afternoon at 2:00 p.m. Caltech's football team opens their gridiron season at LaVerne. Paced by ace quarterback Colbert and halfback Teter, the Leopards should give the Beavers a rough contest. The LaVerne eleven, reported to be "big, vast, and experienced" will be out to avenge losses to Tech in the last two years.

Last week a hard pressed Redlands team finally overcame the Leopards for a 18-7 victory in LaVerne's first game.

Polo Squads Open Practice

Seven lettermen return to spearhead the varsity water polo squad of Coach Warren Emery which kicks off its season Oct. 10 at Santa Barbara. Practice started last Monday.

Five starters including All-Conference forward Clarke Rees are lost from last year's unit which posted a 3-8 slate. Other departed veterans are Vince Taylor, Norm Valenti, Keith Martin and Bob Smoak.

Top gun in the Beavers' attack is expected to be Dave Tucker who copped second team All-Conference honors last year. With the return after a year's absence of former starting goalie Don Wiberg, fellow senior Keith Brown who handled goalie duties last season will be shifted to center forward.

Bob Pailthorp and Pete Rony, forwards, and guard Don Voet are the other returning lettermen. Hoped for is the return of starter Bob Blandford.

Lack of experience and a poor bench are expected to seriously hurt Tech's chances. Bright spots include top reserves Tom Tisch, Bob Ruby and Gary Tibbets who will be battling for the open positions.

A surprising number of freshmen have turned out for the gruelling sport with three high school water polo lettermen among the 15 frosh.

Probable starters for Caltech will be end Fred Newman, being touted for all-conference rating, and star guards John Conover and Russ Pitzer, who last year was named all-conference. Filling in the other end should be two-year letterman Ed Gehle, back from the service. Larry Long and Tim Harrington seem to have the nod at tackle while Carl Gottschall will probably fill the center berth. In the backfield returning lettermen Tom Bjorklund, Harold Gustafson, and Lee Hood appear to be the best bets at blocking back, fullback, and wing back respectively.

Mel Holland and John Walsh will probably share the tailback spot fairly evenly.

Backing up these boys will be several players like Charley Ray and Bob Kerr who have been doing very well lately in practice.

The Beavers will be running from a single wing this year. The passing attack will probably be most effective with such good receivers at the ends and good passers at tailback, but the ground game should also be respectable. On defense Caltech looked good in a practice scrimmage against P.C.C. reserves, except that a little polish was apparently needed on pass defense. If the team is "up," Saturday could see 60 minutes of hard-fought football.

Looking ahead, the next two weekends will be in the Rose Bowl against Redlands and Pomona. These will be our only games there this year.

Grandstand Quarterbacking Made Easy Follow Viewing Tips From Former Star

Dick Van Kirk is a former sports editor of the California Tech and all-conference Beaver quarterback.

By DICK VAN KIRK

This column is dedicated to those of you who want to impress your dates with a knowledge of the intricacies of the rugged game of football. While cuddled up in that blanket 14 rows up in the stands you can diagnose the action of the game to the amazement of your girl, who will be doubly impressed with your ability to follow the action both in the stands and on the field.

Your biggest help in watching a football game is the scoreboard. Pertinent facts like the time remaining, yards to go for a first down, number of downs remaining and the score are usually on the scoreboard. Common sense will help you predict several plays before they are run. For instance, second and third down situations near midfield with long yardage (eight yards or more) for a first down are practically dead giveaways for pass plays. Standard quarterbacking procedure in this situation is to throw a pass. Also, when a team has the ball deep in its own territory, you can turn to your date and say, "Well, they won't pass now." And if a pass is thrown, you merely scream indignantly that the quarterback must have hurt his head on a recent play. If the pass is completed, just mumble something about blind luck and stick your head back under the blanket.

Watch Defense

You can learn a lot about the

game by watching the defensive alignments before a play is begun. If the linebackers and defensive halfbacks seem to be close to the line of scrimmage and "learning in" toward the scrimmage line, they're anticipating a running play. If the halfbacks are nine or ten yards back and "sitting on their heels" ready to backpedal, then they are probably worried about a potential pass play.

Cross Country Work Begins

Cross country practice opened this week under new coach Tony Leonard, aiming for an improvement on last year's disappointing season.

Varsity hopes lie in experienced runners Ben Burke, Dave Loebbaka, Neil Richardson, Jerry Hansen, Dennis Paul, Wes Shanks, and Pete Lippman. Several bright frosh prospects are headed by Dick Tuft.

Four weeks of conditioning will point toward an October 31 season-opening meet, hosting Redlands. Leonard has scheduled a pattern of daily workouts including two days of running a course around Tech, one day at Brookside or the Rose Bowl, and two days of the European-type "in and out" routine in each week. The latter procedure is an alternating run and then jog tour.

All meets are conveniently scheduled on Friday afternoons, not conflicting with the football schedule or other weekend activity. Interested men will be welcomed by Leonard and should report for the 4 o'clock practice.

Key men to watch in the offensive line are the ends and guards. If the ends sprint downfield at the snap of the ball, they're going out for a pass. The guards, or at least one of them, often pull out of their position in the line and run towards the hole where the play is going, in order to block. Naturally, you can follow the ball in the backfield and see where the play goes, but you can't get any advance notice this way. The things to watch for are repeats of previous plays and series of plays.

Set Up to Fake

In every game a team has one running play which works better than any other on that particular day. Of course the play will be run over and over while it is effective. After a while the defense will be set for that play more often than for other plays, so a smart quarterback will fake the first play and hand off through another hole, or fake the running play and throw a pass over the heads of the defenders who have crept in to bottle up a running play.

Series of plays are usually run in a sequence of two or three plays, such as: (1) run a play with a handoff to the fullback, (2) next play, fake to the fullback and hand off to a halfback through another hole, (3) fake to the fullback and halfback on the next play, and throw a pass. Look for sequences such as this at a game.

* * *

With this introduction to the sport of spectating at a football game you're qualified to join the ranks of the second-guessing experts and grandstand quarterbacks who weekly file into the nation's sports arenas and win the game from the sidelines.

ALVIN'S
PHOTOGRAPHIC SUPPLIES
914 EAST CALIFORNIA BLVD.
PASADENA, CALIFORNIA
SYCAMORE 5-4327 RYAN 1-7321
YOUR CLOSEST CAMERA STORE

Drugs Sundries Cosmetics Tobaccos
CALIFORNIA REXALL
PHARMACY
555 S. Lake SY 2-3156
Breakfast Lunch Dinner

Welcome to
THE CAMPUS
BARBER SHOP
(In the Old Dorm)
ALL HAIRCUTS
\$1.50
Two Barbers to Serve You

Serving **CALTECH**
Students and Faculty
for all their
Laundry Needs
SUDS-KISSED
LAUNDROMAT
922 E. California Street
SY 2-2300

LOWEST PRICES
Up to 50% Off
on L.P.'s

FINEST SELECTION
Huge Stock to
Choose From

at
RECORD CENTER
1766 EAST COLORADO BLVD.
PASADENA, CALIFORNIA

Store Hours 10 a.m. - 9:00 p.m. Mon. thru Fri.
10 a.m. - 5:30 p.m. Sat.

You're ready for the big entrance...with **Oxford Miniatures**

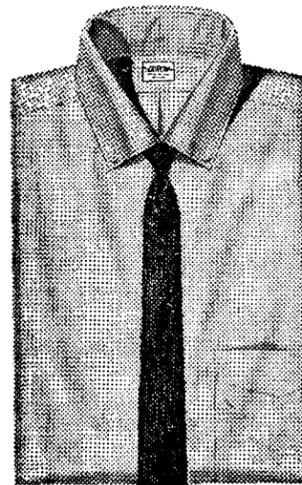
Arrow's newest stripes and checks put you quietly, but firmly, in the "best-dressed" spotlight. They're so crisply and colorfully right with your Fall clothes.

And this rich, new oxford weave is also available in wash and wear!

Try an Arrow and you'll discover why college men buy Arrow 4 to 1 over any other brand. \$5.00 up. Cluett, Peabody & Co., Inc.



ARROW first in fashion



Worth a straight "A" anywhere — come see 'em!

The "A" is for "Arrow" and these *Oxford Miniatures* are the mark of this Fall's well-dressed college man.

You can wear these crisp patterns confidently anywhere. Yet you virtually can't wear out this new oxford weave.

And we have them in a wide and handsome choice of colors. Drop in and look them over.

HOTALING'S Open Monday Eves.
Phone SY 3-5202
921 E. Colorado — Near Lake