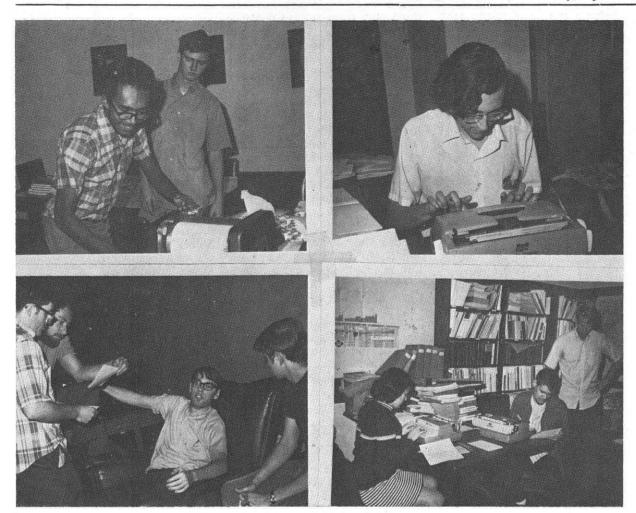
Study A-broad, California Tech

Not At Tech!

Volume LXX

Pasadena, California, Thursday, April 17, 1969

Number 24



'He's Yours Now'

Spiro T. Kidnapped; World War Averted In PME

by Guy Smith

"We tried to borrow the money to ransom Spiro from the Pasadena branch of the United States National Bank, but they wouldn't lend it to us." With these words, John Hockert, head of the United States team in this year's Political-Military Exercises, described the U.S. effort to ransom the vicepresident from the kidnappers who abscounded with him. This was one of the lesser U.S. problems.

Over all, things could have been worse. For the fifth year in succession, World War III was not started. This was not the obvious result this year. The Italians and the Israelis both acquired nuclear weapons, and the Chinese Communists succeeded in putting two nuclear weapons in Albania.

invaded Rumania because that nation had, working with Israel, developed the SHAFT anti-aircraft missile. The Russians did not use enough troops in the initial attack, a fact which allowed the Rumanians to destroy the brides over the Danube and withdraw into the Carpathian Alps, inflicting heavy casualties upon the invaders. While this was happening, the Czechoslovaks rose against the Russian troops in their country and threw them out, a situation which would probably have rectified when the

(Continued on page 6)

ARC Presents 'An Education

Fleming R. A. Calls For Study Abroad Program

Should Caltech provide a broader educational experience? This is one of the questions many of the undergraduates are asking today. Can a school of this size, with approximately seven hundred undergraduates, provide most of the opportunities that are available for students in other major universities?

One who thinks this is possible and also desirable is Zoltan Tokes, the Resident Associate of Fleming House. He claims that an Undergraduate Study Abroad program is one of the effective ways of achieving this goal. Therefore, together with Dr. Terry Laico, a Postdoctoral Fellow in Biology, he designed a questionnaire to assess student body feelings about such a possibility. The questionnaire was de-

signed to find out generally what studies and places students are interested in. This information would then provide a starting point for further serious considerations. The inqiry was directed toward the cultures, geographic locations, topics of interest, extent of financial commitment, etc. The results, obtained from all seven undergraduate houses, are now being compiled in order to present them to various faculty committees. In next week's issue we will publish a full evaluation of the questionnaire and the possible consequences of such a program.

Big T Editor, Bus. Manager Resign Yearbook May Come Out By February Next Year

Big T Editor John McCord and Business Manager Mike Sperry resigned from their respective positions Monday evening in the conclusion of a long controversy concerning the delinquent compilation and lack of advertising for the Caltech Annual.

At the time of this writing, Chip Smith and Peter Zassenhaus are the probable candidates for the editorial and business positions. Smith had unofficially accepted, pending a study of the situation. Zassenhaus was unavailable for comment. Both have devoted extensive work to those portions of the book now complete.

No figures were available on the exact status of the publication, but it was revealed that two deadlines involving some 74 pages apiece had been missed. The publishing company, under contract, has the legal right to delay publication one day for every day missed after the deadline. Three months have been accumulated so far.

Smith is now reorganizing the existing staff and negotiating with the publisher for a delayed publishing date. At the Monday evening BOD meeting Director at Large Glen Spain reported that he had been told a February issue could be expected.

Of the advertising necessary, less than 15 per cent of the anticipated total needed has been contracted for. The **Big T** at present needs at least 1200 dollars in ads for a solvent issue. Along with the advertising faults go a possible lawsuit, perhaps by the publishers, for breach of contract.

Notice

TOTEM LIVES (more or less)

Anyone interested in TOTEM please show up at the Coffeehouse at 9:30 Monday night. If Falk doesn't show up there will be a plotting session to deal with his fate.

STUDENT SHOP

Elections this Saturday at 10:00 a.m. ALL ASCIT BUDGET REQUESTS

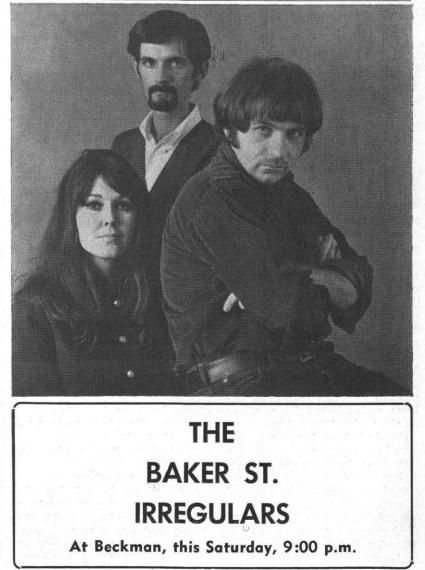
should be in to Leonides Juibas. WHAT'S IT ALL ABOUT, THEO?

Caltech Y's Visiting Theologians Program on April 21-24. On Tues., Wed., Thurs.—walk-in seminars 2-4 p.m. in Winnett Lounge, and faculty dinners. Interested? Info in Y office or 112 Page. LOST

One vice-president. Answers to the name of Spiro T. Enenstein. Last known to be on an airplane not allowed to land in Havana. If found, please do not return.

NON GRATIS

Yes! No one can get in gratis (with few exceptions) for the Saturday, April 19th showing of Bergman's "Persona" in Culbertson. You must pay, but only one dollar. A fine Chaplin flick will also be shown. (Continued on page 3)



Cooler heads prevailed, though.

The crisis this year was not put into the initial scenario as has been done in the past. Half an hour into the game, a supplementary scenario was handed out which the startled participants discovered that President Tito of Yugoslavia, portrayed by Dr. Harold Brown, had died. The Friday evening session ended with the Yugoslavia still without a government. After this was resolved, the East Germans began jamming navigational aids in the Berlin air corridors, resulting in the crash of two airliners. The West German team leader. Bob Jackson found out in the midst of this crisis that one of his team was an East German spy. He decided, correctly, that the guilty party was his defense minister, and eliminated the traitor from the team.

About this time, the Russians

Happening' Sat.

The ASCIT Research Center Education Group will present An Educational Happening" on campus this Saturday and Sunday. According to Happening chairman Rich Willis, the weekend will serve as a means of demonstrating new ideas in teaching and for planning the Research Center's ten-week Summer Institute on Educational Change.

Registration, for which there is a \$2 fee, will take place on the Beckman mall on Saturday from 8:00 to 10:00 a.m. The several hundred participants, including local teachers and administrators, college students, and educational specialists, will begin by participating in a guant collage. The rest of the day will be a marathon of 40 different workshops from which to choose seven to (Continued on page 5)

TECH Record Poll: See Page 5

CALIFORNIA TECH

Thursday, April 17, 1969

Editorial

Page Two

Firm Action Lauded

After considerable discussion and delay, the ASCIT BOD finally decided to act on the Big T trouble. As reported on Page one, the former editor and business manager of the yearbook resigned. It is believed at this time that those positions will be filled by Chip Smith and Peter Zassenhaus. We consider both Chip and Pete to be extremely qualified, competent people, and can only applaud the Board for its responsible action.

However, we feel that this entire problem could have been avoided if the old BOD had recognized the responsibility it had to insure that the people they appointed to the Big T staff fulfilled their obligations.

The recently dismissed editor and business manager of the Big T certainly did not do this. Before they resigned, they missed two deadlines for a total of 148 pages. The business manager had only one third of the number of ads necessary for publication.

What causes our dismay is that, until two weeks ago the Board was unaware that the yearbook was in any trouble. Yet, the Board receives money from the students for the book, and appoints the editor and business manager. We believe that this makes the Board responsible to see that the Big T is published on time.

In the future, the BOD ought to receive notice from the yearbook publisher of any missed deadlines. Further, the Big T editor and business manager should appear regularly before the Board for progress reports, and they should be asked to back up their reports with figures.

The BOD must act to prevent a reoccurance of this unfortunate situation.

> Craig L. Sarazin Ira D. Moskatel

Deed Done Dutifully

It is always sad when a tradition dies. Such an event took place at Registration this term. Student body cards were given out on time.

We offer our thanks to Gary Stormo and Glen Spain, Directors-at-Large, for a job well done. They have replaced the tardiness, traditionally associated with the distribution of these cards, with efficiency.

> Craig L. Sarazin Ira D. Moskatel

Y Sponsors Visit By Theology Students

by John Healy

Who's Dead?

"Science asks how; theology explains why." "What is authentic humanity?" Greater understanding of the new directions of theological probing and reflection today is the aim of the Caltech YMCA's Visiting Theologians Program on April 21-24.

Knitty-gritty Theo Band

In order to accomplish the program's goal, the Y is bringing to campus nine seminary students from Northern and Southern California. Each will live in an undergraduate student house. Free and exciting discussions - bull sessions-will hopefully be the result. Walk-in seminars will also be held on Tuesday, Wednesday, and Thursday from 2 to 4 p.m. in Winnett Lounge. The seminarians will be essentially available at any time. These theologians comprise a highly capable and free-thinking group. All nine were recommended by their respective colleges and selected from others on the basis of interviews. Glenda Briscoe is the only woman in the program. She has a B.D. from San Francisco Theological Seminary and has acquired an extensive background in social work and the Presbyterian ministry. She is presently Chairwoman of the President's Minority Relations Task Force. assistant to the director of the Festival Theater in San Anselmo, group leader with the National Sex and Drug Forum, and volun-

teer worker at the Presidio Army Base.

Paul Citrin is in his first year in the Rabbinic program at Hebrew Union College. He classifies himself as a liberal Jew.

Ronald Crandall is finishing his studies at Fuller Theological Seminary for becoming a Doctor of Pastoral Theology. He has served as a missionary in Vietnam. He is an ordained Methodist minister and presently minister of youth at the United

Jeff Ochsner The Right View

by Jeff Ochsner

(Eds. Note. The Right View is a guest editorial column by Jeff Ochsner which appears in the **California Tech** as often as possible. Views expressed are solely those of the author. The author is not representing any campus or outside group or organization. The **Tech** takes no responsibility for subjects discussed as they may be of controversial nature. Comment is invited. It should be directed to the **Tech** office.)

The defense of values and freedoms through use of military force is a difficult choice for any society. For Americans, born under a system of individual liberty and maximum freedom for all men, the choice becomes particularly hazardous. Indede, an inappropriate system of defense may be very much a threat to those ideals which we seek to preserve. The discussion of military manpower procurement must, therefore, call to mind the foundations of American society. Additional questions, too, must be examined. Although justice is foremost, problems of economics and strategic preparedness cannot be ignored. The question of military manpower procurement is one of basic ethical, economic, and strategic considerations.

The present system of military conscription is assailed from all sides. Liberals, radicals, and conservatives oppose the draft. Liberals seek to make it totally random or extend it to social service. Radicals seek to end it or extend it to social service. Neither of these groups appear to be against compulsion, but rather they are just against the present method. Conservatives are the only ones who seek to end the draft totally, with no exceptions. Conservatives appear to be the only ones opposed to compulsion in a free society as a moral issue.

The existence of the draft in a free society represents the very negation of that freedom. It denies to a man his fundamental right, right to life. Instead it attempts to establish one of the fundamenal tenets of statist collectivism: that a man's life is the property of the state, or barring that, his life is the property of his fellow men. Thus, a man is compelled to give his life on the battlefield or sacrifice it to his so-called "brothers."

Can any rights exist in such a case? When the state has the power to compel a man to serve a cause he may neither support nor understand, or even violently oppose, then who is truly free? Can any rights long exist when so flagrant a violation of rights can occur? Is it not but one short step from this to enslavement?

But. notice, do liberals oppose this? Edward Kennedy, so-called defender of the oppressed, has proposed a lottery. Now man's rights are to be dependent on the roll of a die. And, Robert Mc-Namara, when he was Secretary of Defense, he propsed all young people be forced to serve for two years either in the military or in some form of social work. Again, what of individual liberty?

Those who attempt to justify the draft say that man's rights impose obligations. Thus, they would attempt moral blackmail. But to say rights impose obligations (to the state) is to say such righs are no longer inalienable (but are gifts from the state). To get his rights (including the right to life), a man is forced to offer his life in return—an inherent contradictions.

Those who defend the draft say that no other system will work. This is defense by default. But it need not be so. A volunteer army not only will work, but has certain inherent advantages.

It has been demonstrated repeatedly that a volunteer military would be more effective militarily. Rather than being staffed by reluctant conscripts, the military would be composed totally by career personel. This would increase morale, provide a much lower turnover and thereby lower training costs. Training could be more intensive so military men would be more competent. A similar but more skilled force could provide equivalent and probably superior military strength to our present forces.

A volunteer militayr would remove the present draft inequities and uncertainties. Additionally, personnel with valuable skills would not be forcefully removed from the economy and the country would benefit from increased productivity. (Congressional estimates at present losses to the economy from this effect run about \$1 billion anually.)

A volunteer military appears to have a number of drawbacks, h o w e v e r. Presently, military service is among the lowest paying occupations nationally. Estimates at raising military pay to levels comparable to civilian jobs run from \$3 to \$7 billion annually over present levels. (However, it is notable that 35 per cent of American businesses faced employment shortages due to the productivity of business, meaning higher tax revenues, and without the additional expense of 4000 draft boards, the increase in expenditures necessary could be as low as \$1 billion.) Economically and strategically a volunteer military will work.

Of course, the question still remains, who will volunteer? (Note: Volunteers need not be as numerous as draftees are presently. The General Accounting Office has reported that 80 per cent of the military jobs could be filled by civilians rather than by draftees as under the present system.) If the incentives necessary are provided, volunteers should be forthcoming. Decent pay and generous pensions will be necessary. It should also be evident that if the U.S. were to become involved in an unpopular war, the number of volunteers would probably decrease. Thus, in one sense, the volunteer military becomes a safeguard against military adventurism.

The present draft system has been in effect since 1950. However, only recently has the case against it been so vigorously drawn. If the draft is to be eliminated the people must fight against it. In January of this year a bill to abolish the draft and create a volunteer military, S. 503, was introduced in the Senate. It is now in committee. To aid in abolishing the draft you should write your Congressman in support of this measure.

Act now. There is so little time.

welcome to the Campus Barber Shop in Winnett Center Three Barbers to Serve You 7:45 to 5:15 Monday - Friday Paul A. Harmon

PAT'S LIQUORS AND DELICATESSEN 1072 E. Colorado SY 6-6761 Open to midnight daily, 1 a.m. Fri. & Sat. Keg Beer Party Supplies

CaliforniaTech

Published weekly during the school year except during holidays and exams by the Associated Students of the California Institute of Technology. The opinions contained herein are solely those of the newspaper staff.

Editors: Ira Moskatel, Craig Sarazin, Editors-in-Chief; Dave Lewin, Alan Stein, Jim Cooper, Associates.

Staff: Roger Goodman, Charles Creasy, David Linker, Bob Dullien, Bob Nnstein, Mike Farber, Bob Geller, Etaoin

Methodist Church in Granada Park.

Father Thomas Havel is assistant pastor at St. Philip the Apostle Church in Pasadena. He is on the board of advisors of the Foothill Free Clinic and chaplain of the Caltech Newman Club.

Doug Huneke is a senior at San Francisco Theological Seminary. He is author of a Presbyterian Layman's study guide entitled **Men in Trouble—The Death Penalty and Prisons** and originator of two death penalty bills during the 1969 California State Legislature. He has been a group counseling leader at San Quentin Prison for two years.

Soul Brothers

Hal Jackson is finishing his work for a Master of Theology degree at Southern California School of Theology. He is a member of the United Church of Christ, the NAACP. and the Urban League; and assistant minister at St. Matthew's United (Continued on page 6) draft in the past year. With these shortages filled by eliminating the draft, the resulting increased

SUMMER JOBS WE HAVE A SPECIAL JOB JUST FOR YOU! National Agency of Student Employment

P. O. Box 52492 New Orleans, Louisiana 70150 Cash □ Check □ Money Order □ Gentlemen: Please send 1969 summer job directories checked below.

VACATION RESORT JOBS\$3.00 Work with students at America's finest Resorts.
FOREIGN JOBS\$3.00 Gain valuable experiences abroad with pay.
CAREER TRAINING OPPORTUNITIES\$3.00 Start your career working with America's best companies.
SPECIAL OFFER — Our latest bulletin which contains all three job fields plus a special job assignment for you. Please state interest and desired location\$4.00

Schroedlu, Mike Stefanko, T. M. Apostol, Nick Smith, John Healy, Kevin Savage, Con E. Staisey, Jeff Hecht, L. T. Stupor, D. C. Agnew.

Photographers: Stephen Dashiell, John Bean, Alan Stein, Paul Levin.

Business: Ed Schroeder, Manager; Metin Mangir, Circulation Manager; Art Selly, Staff.

California Tech, Publication Offices: 1201 E. California Blvd., Pasadena, California, 91109. Second-class postage paid at Pasadena, California. Represented nationally by National Educational Advertising Services, Inc. Subscriptions: \$1.50 per term, \$4.00 per year. Life subscription: \$100.00. Printed by Bickley Printing Co., 25 South Fair Oaks Ave., Pasadena, Calif. Volume LXX, Number 24, Thursday, April 17, 1969.



Letters **Feinberg Discusses ARC-EPC** Merger

As midterms near, the ASCIT Board of Directors have been spending large amounts of time considering academic affairs at Tech. There are a lot of exciting possibilities for academic change currently being discussed, and I would like to take a little time to indicate what I feel to be some of the important ones.

The most important change in the works is the restructuring of the Educational Policies Committee. Many Teckers' only contact with this committee is through the "bitch" sheets placed around campus. This year, the EPC has done a satisfactory job handling course complaints, but it has done little else. All the "meaty" problems of academics have been left to the Academic Reforms Committee. This split of responsibilities has been an unsuccessful experiment in the minds of many people directly concerned with the actions of these committees.

As a result, a proposal will be submitted to the next BOD meeting calling for a merger of the EPC and the ARC. The new EPC will be charged with handling course complaints; revising current courses; planning new courses; and planning long range improvements in academics. It will be the responsibility of the new EPC to take action to implement their recommendations. I envision an active committee, a committee not hamstrung by a lack of members and not forced to consider only grunge (course complaints)." The Ex-Comm of each house will be responsible for recommending a few of its house members for membership on the new EPC. The new EPC can be an effective committee, especially with the ASCIT BOD doing everything possible to help

Other areas of immediate concern to most teckers will include

it.

AND

independent study and research more commonplace. A coffee hour has been organized to discuss the Scholars Program with the Faculty on May 8. More people should be aware of the possibility of organizing small seminars on topics of interest under each option's "Independent Study and Research" courses. To keep abreast of current developments in science, an effort is under way to "legitimize" upperclassmen's attendance and participation in the first-year grad students' seminars

CALIFORNIA TECH

organized by each option. New teaching techniques are being implemented. A group of thre juniors is currently teaching all four hours per week of a Math 1c section. If this experiment is successful, look for expansion of undergraduate teaching

These are only a very small number of the deluge of ideas discussed at the ASCIT planning session last weeknd. I hope to report on the progress of others and expand on these in the weeks to come. I will appreciate any

(Continued on page 6)

(Continued from page 1)

More Notices

'Y' Officers List; Beckman Slate How to Get Y Minutes, Info . . .

1) The new Y student officers were elected. They are as follows: President, Bob Fisher; Vice President, Ben Barker; Secretary, Alan Stein; Treasurer, Tom Joseph; Reps at Large, John Bean, Dave Lewin.

2) Minutes of Y will be sent to all interested personnel. At the present time, Y minutes are being sent to the following groups:

Current Y student members, Y staff, Y Board of Directors, Y officers, House Secretaries, The California Tech.

If you are interested in receiving Y minutes and do not fall into any of the above categories, or if you know of someone else who is interested in Y activities, please send their name to Alan Stein, Caltech Y.

For This Week

Friday, April 18

The combined CALTECH and OCCIDENTAL BANDS performing works by Debussy, Mozart, Milhaud, Speer. Beckman Auditorium, Pasadena, 8 p.m. Free.

Sunday, April 20

GOLDMAN-BROWN DUO, Harris Goldman: violin; Carolyn Brown: piano. Sonata in F major, Op. 24 by Beethoven; Sonata in A major, Op. 100 by Brahms; Sonata No. 2 by Bartok. Dabney Lounge, Humanities, Caltech, 8:15 p.m. Free.

Music: Folk and Pop

Saturday, April 19

THE BAKER STREET IR-REGULARS (Mike Smith, wife Barbara, and Ron Kickasola with Eliot "Moose" Medwood their bass player) - the newest in folk-pop singing. Caltech's Beckman Auditorium, Pasadena. 9 p.m.

Page Three

Graft And Corruption

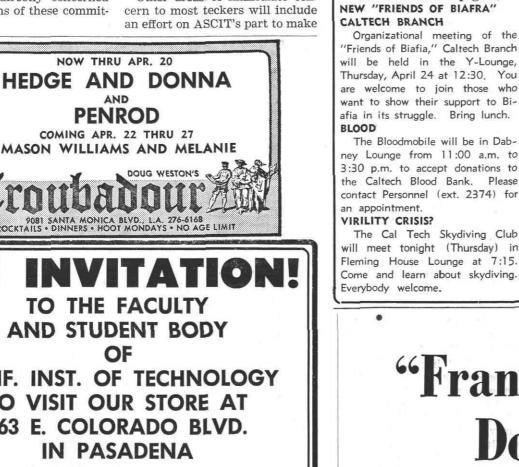
Do you have the necessary devilish virtues of greed and ego? Do you think your wit is surpassed only by your infinite sexual prowess? Then join the TECH staff and tell the world about it.

The Editors

You like Nancy's thing better? Drown your sorrows over a pizza at ROMA GARDENS — 1120 E. Green Specialize in Italian Food -Beer and Imported Wines Spaghetti Special Tuesday — \$1.00 For Quick Service Call 449-1948 Open Daily 5-12 p.m.; Fri. & Sat. 5 p.m.-2 a.m.; Sun. 5-9 p.m

"Francis Albert Sinatra Does His Thing" (One more time!)





If you missed Frank's show last Fall, take heart! We're bringing the whole Thing back for an encore ... same great Sinatra ... same great guests:

DIAHANN CARROLL and THE FIFTH DIMENSION!

.

And of course, same great sponsor. (But you know that.)

> **MONDAY, APRIL 21** CBS-TV 9-10 p.m. EST (but check your local listing just to be sure.)

Budweiser is the King of Beers.

(But you know that.)

ANHEUSER-BUSCH, INC. . ST. LOUIS . NEWARK . LOS ANGELES . TAMPA . HOUSTON . COLUMBUS

<u>'Gold Fever'</u> Pravda On Reagan

Translated by William Devereaux from an article entitled "Gold Fever" in March 25, 1969 issue of the Soviet party newspaper "Pravda."

by Yurii Zhukov

An interview was granted to me by the governor of California, Ronald Reagan, a man famous to some extent for his, to say the least, extremely right wing views.

Reagan himself is a former star of the Hollywood movies and television, and in the political life of the USA a great deal depends on the fact that a political figure during his career is held under the searching eye of the television camera. In the course of the pre-election campaign the rival of Reagan, his predecessor in the post of governor, Democrat Brown, attempted to cut him by a caustic question in a television battle. "How are you, an actor, not possessing experience in government service, able to lead the largest state?" But Reagan was not embarrassed. "I played the roles of kings, so that in the role of governor I'll manage somehow,' he said with a dazzling smile. In the end the voices of the voters moved over from Brown to him.

So here I am in the consulting room of the governor. A tall, athletic appearance, in an elegant light suit, always with the dazzling Hollywood smile on his face, he is sitting at an immense desk, he leans back in his armchair. Under his feet is a glittering sheet of plexiglass, which covers the carpet. Ronald Reagan receives the representative from "Pravda" extremely courteously — one feels that it gives him pleasure to point out to a Soviet Communist how great and rich his state is, imagining himself, as they like to say here, "a piece of the 21st century."

"I'm very proud of California," says the governor. "This is a classic example of free enterprise. We are in fifth place in the free world according to gross national product."

"In fifth place?"

"Yes. In first, of course, stands the United States," he is still smiling dazzlingly, "then the Federal Republic of Germany, England, Japan, and California. With our twenty million inhabitants we produce as many goods and services as a hundred million Japanese produce. We make forty percent of all the vegetables and fruits eaten by Americans. We make the larger portion of the airplanes and missiles which join the armaments of the United States. We . . ."

I stopped listening to the gov-

question: for him, California is virtually an independent state. Oh, of course, he is a one hundred percent American, and standing beside him on the desk is the stars and stripes flag eloquently reminding one of this. But California in his view is this quintessence of Americanism, and ten percent of the citizens of the USA live here; it is these utterly peculiar Americans pointing the way not only for America, but also for the whole world.

As far back as 1883 one American writer wrote in a magazine. "In almost all respects California reflects the American spirit — only there is more of everything in her. A geranium there grows unbelievably tall and firm, like a small tree; a beet, like a giant watermelon. So unnaturally grand that there are fanatics and bigots, fakirs and prophets, mystics and visionaries."

And here I am holding in my hands an excellent printed "Economic Report of the Governor. 1968" — a booklet courteously presented to me by an assistant of Reagan, and pondering over the cost of it, I am discovering the wealth and that really high standard of technical development of California, of which my interlocutor takes pride.

"California has shared heavily in the activity resulting from the Vietnam war," it says on page vii of this document. "The importance of our defense and space industries has made this state a major source of the armaments for modern warfare. Aerospace manufacturing employment jumped by another 48,000 last year and is still rising. More than one-third of our industrial production is in this field . . ."

Yes, the military-industrial complex in California has really "shared heavily in the activity resulting from the Vietnam war," as the governor expresses diplomatically. We may say, perhaps more coarsely but more precisely: the monopolies of the USA and Californians themselves take part in an active way in the American aggression in Vietnam and assume with the Pentagon the responsibility etc., etc. ...

Space does not permit further

(Continued on page 5)

Palomar Adds 60 Inch Scope

Heavy metal parts for an advanced new 60-inch telescope are being shipped to Palomar Observatory from Caltech's central shops.

"We've completed our tests in Caltech's shops, and any minor adjustments or modifications can be taken care of at Palomar after the telescope mounting has been installed," said Bruce Rule, chief engineer for the Mt. Wilson and Palomar Observatories.

At Palomar the concrete outside walls for the new observatory building have been poured and the steel dome is being erected.

Rain and Snow

"Installation of the telescope should begin after they've put the dome on," Rule added. "The whole building should be completed around July 1. Our schedule was delayed three or four weeks by rain and snow."

The mirror—a 60-inch-diameter, one-ton disc of fused silica—is being ground to a precise curvature in the optical shops of the Mt. Wilson and Palomar Observatories in Pasadena. The observatories are operated jointly by the Carnegie Institution of Washington and Caltech.

The mirror was cast by the Corning Glass Works, Bradford, Pa., and should be ready by late next fall.

Shining Put-on

The parabolic disc will be aluminized at Palomar. The aluminizing process provides the mirror's highly reflective surface and involves placing the fused silica in a vacuum chamber where aluminum is vaporized. Minute particles of the shiny metal are deposited in a thin layer on the mirror's polished surface, providing the h ig h reflectivity. Fused silica was used as the basic mirror material because it expands and contracts very little with changes in temperature.

The whole instrument—weighing almost 19 tons—will be housed in the three-story observatory building near the bigger dome of the famous 200-inch Hale telescope. The Palomar Observatory site, overlooking Mendenhall Valley in San Diego County, is at approximately 5,500 feet altitude.

Set Me Free

The new telescope is the first major addition to the observatories since the Hale instrument



became operational in 1948. It is expected to be particularly effective for photometric observations that don't require the great lightgathering ability of the 200-inch telescope. The new instrument is also designed for use with advanced new electronic and photographic equipment. and it should free the larger Hale telescope to concentrate on observations of the extremely faint objects for which it was primarily designed.

At Palomar, the new instrument will effectively bridge the gap between the high magnification and small field of view of the 200-inch telescope and the comparatively low magnification and large field of view of the useful 48-inch schmidt telescope camera. The relatively large field of view of the new telescope -1¼ degrees, taking in an area slightly more than twice the diameter of the moon—will make it a valuable companion to the schmidt for survey work.

It Gets Larger

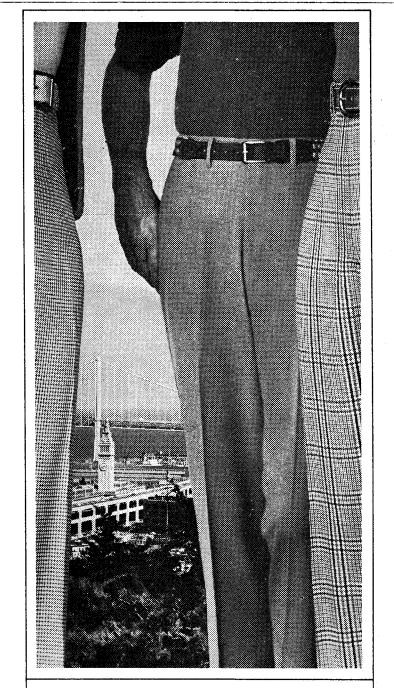
Although the new instrument's telescope tube is only 13 feet long, the use of mirrors extends its focal length to equal that of much larger telescopes. It has a Cassegrain focus—in which the

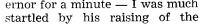
light is reflected by a mirror near the top of the tube down to a plane just below the primary mirror—for direct photography and photometry; and it has a longer (coude) focus for spectrographic studies.

The new observatory building includes a combination office, library and photographic plate assessment room, and darkrooms for developing plates. Temperature is controlled by an air conditioning system and doubly insulated walls.

Bread for 60

The total cost of the new telescope, facilities and support equipment is about \$1 million. A grant of \$590,000 to the Carnegie Instituteion from the National Science Foundation covered costs of materials and construction of the telescope itself, while the Oscar G. Mayer family of Madison, Wis., pledged funds to Caltech for the observatory building. A grant of \$125,000 from the National Aeronautics and Space Administration supported preliminary design studies and paid for the 60inch mirror blank. Planning for the new instrument began in 1962.







You will find a

complete selection of

Cactus Casuals slacks

in our Alley Shop.

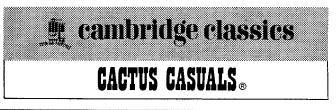
Drop in at your

earliest convenience



Direct from San Francisco in living color: Cambridge Classics featuring Fortrel®

Cambridge Classics salutes the new season with a Variety Spectacular reflecting the elegant excitement of San Francisco's Telegraph Hill. Spirited colors. Stimulating patterns. You'll enjoy the crisp, cool blends: Fortrel® polyester and cotton. \$14.50 and under. For a list of nearby stores, write Box 2468, South San Francisco, California 94080.



Education

(Continued from page 1) attend. Some already scheduled are film techniques, dance and expression, the discovery method of learning science. art, math, creativity, and English as a second language.

A keynote address will be delivered at 5:00 in Beckman by Dwight Allen, Dean of the University of Massachusettts School of Education. Dinner will follow on the Olive Walk. Participants are also invited to the performance of The Baker Street Irregulars at 9:00 in Beckman.

On Sunday, task teams will meet to decide on plans for the Summer Institute. Those interested in organizing programs will be continued, leading into the Summer Institute.

The education group is already conducting a pilot program, with

STUDENT

RATES

Dear Sports Info Dir. "Sports" Calls for Beauties

Once again, we're calling for

at extension 2470.

SY 3-6149

ESQUIRE THEATRE

2670 E. Colorado 3-6149 --- MU 4-1774

Academy Award Winner!

"Best Actor"

CLIFF ROBERTSON in

You keep flunking your best subject?

CHARL

the 1969-70 season.

your help in rounding up a series If you have a pretty coed on of candidates for our annual Camthe campus who will not gradupus Queen contest. As you know, ate before June, 1970, please let SPORTS publishes over the fall us know. All we ask is that she and winter months a roster of have a pretty face and handsome pretty coeds gleaned from a nafigure. If you have a candidate, tional search, and asks its readwould you kindly send us some ers to pick a winner. The congood, glossy photos of her. We tests have been well received don't want studio-type sophistiamong our readers and the colcated cheesecake or portrait jobs. leges, over the past 18 years. We What we do want are informal hope to continue this success in photos, with some kind of a campus background, giving us a good view of the gal's face and figure. students teaching biology to 3rd-We'd like her in casual, campus and 5th-grade pupils and abstract dress. If she is a cheerleader or math and logic to 7th- and 8thdrum majorette, photos of her grade pupils. More information in "uniform" would be good. If about the Happening and the Edyou could include the vital phyucation Group may be obtained sical statistics and a brief outline of background data, we would be home free.

> The first entry in our contest will run in the September issue (on sale in August). We are accepting entries now and will continue to do so for the next four months.

> Many thanks for all your past help and I hope you can supply us with a pretty candidate.

Best wishes,

Bob Rubin, Assitsant **Managing Editor Sports Magazine**

Ed. Note: Coach Emery received this last month. Applicants should not forget vital statistics and confirmation from Institute Physician.

Tech Presents Record Poll

by Bob Enenstein

Playboy has its Jazz Poll, and KHJ has its Boss 300, but here comes the topper of them all, the 1969 CALIFORNIA TECH MU-SIC POLL.

It's all very simple, just fill in the poll below, tear it out, fold it, and drop it in the campus mail.

Any and all songs, albums, and performers are eligible. We expect votes for songs ranging from Chopin's VI to Itsy Bitsy Teeny Weeny Yellow Polka Dot Bikini to Christopher Colombo to Hey Jude.

So hurry one, hurry all, get those votes in, and see your song race to the top of the charts. See if Tiny Tim can outpoll Mrs. Miller, and find out the results of other exciting battles in an upcoming issue of the Tech.

The poll form is at the right. Just tear it out, fill it in, and drop it in a campus mailbox.

Trackers Stomp SCC Suffer Loss To Redlands

In two meets last week, the Beaver trackmen ran over Southern California College (SCC) 102-43, while losing a close meet to Redlands, 83-60.

Tim Tardiff led the Beavers with two victories, the first being a fantastic mile in 4:25.1, five seconds faster than his previous best. He then doubled by winning the 880 in 2:03.4 as he overtook Tech's Antaki. Petersen finished close behind in third. Smith captured the two mile in 10:32.2 and was followed by Higgins and Heimeyer. "Smitty" also took a third in the mile.

Even against SCC, Caltech's blatant weakness came through as Hall took a third in the 120 highs while Hurn was third in the 440 intermediates.

Coming through were the sprinters Butterworth and List who took 1-2 in the 220 and List took first in the 100 while Butterworth was third. With Tarjan injured, Watkins won the 440 with a good 51.4 and was followed by Andrew.

The Beavers did well in the weight events but won with very poor marks. Tyler and Holmes placed one-two in the pole vault while Ruth and Blaschko were the same in the shot-put. The Beavers swept the javelin with the team of Jackson, Cox and Thoele who finished in that order. The discus went to Abatzoglou with Blaschko and Beatty following. Fox took first in the high jump with a Beaver season high of 5'8" while Hall was third. Stormo was second in the triple jump. The Beavers also started with a victory in the 440 relay and finished with a victory in the mile relay.

Against Redlands, the Beavers fared somewhat worse. They started the meet with a victory in the 440 relay. Tardiff capturing the mile, coupled with Tarjan's victory in the quarter in the time of 50.4, were the only Beaver victories in track. Mikkelson took a second in the 120 highs while Hurn was third in the 440 intermediates Tarian was second in the 220 while Smith and Higgins were second and third in the two mile to round out scoring in the track events. Stormo and Pool were one-two in the triple jump beating Redland's Proctor and their roles were reversed in the long jump. Abatzoglou won the discus while Ruth and Beatty putted their way to second and third. Jackson took second in the javelin followed closely by Theole. Tyler and Holmes took second and third in the pole vault while Pitachowski captured third in the high jump to finish the Tech scoring.

Pravda's Reagan (Continued from page 4)

elaboration of the rather extensive discussion which continues in essentially the same vein. If the propaganda necessary for an article of general internal circulation be ignored, one sees in the author a Russian with prudence, tolerance, shrewdness, intensity of purpose, reflected by his breadth of interest and knowledge, and the humility needed to successfully approach new knowledge.

The "Economic Report of the Governor. 1968" is available in Millikan Library.

Think it over, over coffee. The Think Drink.



For your own Think Drink Mug, send 75¢ and your name and address to Think Drink Mug, Dept. N, P.O. Box 559, New York, N.Y. 10046. The International Coffee Organization





Theologians

(Continued from page 2) Church in Hacienda Heights.

Ellis Keck is working on a Master of Divinity degree at the American Baptist Seminary of the West. He is pastor to youth and visitation at Second Baptist Church of L.A., an almost exclusively Black church.

Rod Seeger is a senior at Pacific Lutheran Theological Seminary. He has worked as assistant minister in a congregation in Castro Valley. His specialty is Pastoral Counseling, and following graduation he will be or-

CLASSIFIED

FOR SALE

2/3 OFF STUDIO SCOTCH AND AM-PEX RECORDING TAPE; 7" 1800' LOW NOISE POLYESTER REG. \$7.00 NOW \$1.95; 7" 1800' STANDARD OUTPUT POLYESTER REG. \$6.00 NOW \$1.50; VIDEO TAPE ½ PRICE; CALL FOR FREE CATALOG; MONEY BACK GUARANTEE.

DAK SOUND 984-1559 877-5884 10845 VANOWEN, N. HOLLYWOOD

HALF PRICE 3 months old 40-watt AM-FM Stereo Receiver (Trns.) \$85.00, Garrard Changer \$35.00 Sony Deck \$55.00 Large Speakers \$30.00 ea. Headphones \$10.00 After 1:00 P.M. 839-2216

If you're the kind of family looking for a beautiful acre of green trees, a play area, a brook, a guest room and bath under the garage, separate from the house, a redwood contemporary home with up to 5 bedrooms, a separate dining room, a lovely kitchen with garbage disposal, dish washer, electric stove and a beautiful quarry tile floor, many natural wood cupboards throughout the house, your own sun deck and excellent financing, you must see

652 ANTRIM PLACE FLINTRIDGE ROBERT B. CUMMINGS AND ASSOCIATES JANE CAUGHEY 796-5747 or 449-6624

> We cordially invite California Tech students and faculty members to bank with us.

Complete banking services including: Automobile Financing Bank-By-Mail Certificate of Deposit Checking Accounts (Bookkeeping by electronic automation) Collateral Loans Drive-In Banking Escrows Foreign Banking Letters of Credit Home Modernization Loans Life Insurance Loans Money Orders dained into the professional ministry.

John Spencer is in his second year at Pacific School of Religion. He is an ordained deacon and currently assistant youth minister at First United Methodist Church in Palo Alto. He graduated from U. of C. at Berkeley in electrical engineering and was once a C.O.

For further information about the program (a brochure, etc.), drop by the Y office or contact John Healy in Page House.

Since people must avoid stereotypes and "block" thinking, there is no better place to begin than in theology. Ideas are exploding in this controversial field: What's honest sex? What about situation ethics? Whose heart? Should a minister be a social-political activist? Why God? And how about the stereotyped scientist?

Feinberg Letter

(Continued from page 3) comments or suggestions on academic affairs.

Jerry M. Feinberg ASCIT Director of Academic Affairs

Springfield's Young Shows Playing, Wiring Talent

by David Dixon

"Neil Young" by Neil Young (Reprise) \$3.50.

The Buffalo Springfield has gone, but Neil Young its lead guitarist and a major force in the group has survived and has gone out on his own. His first album "Neil Young' demonstrates his two main talents-guitar work and song writing. The guitar work is always well-done and most of the arrangements fit well with the style of each song. The songs range from the countrywestern Springfield style of "If I Could Have Her Tonight' to the Dylanesque "The Last Trip To Tulsa.'

One must appreciate Youngs voice to enjoy all of the album. In the slower moving songs his voice dominates with its sad, melancholy quality. He almost seems to be dying (or to be more correct, it sounds like a cat is dying). My favorite songs are "The Loner' and "I've Been Wating For You . . ." The former is a good rock song with some fine guitar while the second is a song done in a country-western vein. "The Last Trip to Tulsa" is the most symbolic and well-written of his songs. It is a long dreamlike epic with many comments on everyone's life. "I used to be a folk singer, keeping managers alive . . ."

The record has some weak spots especially on side two where the introductory instrumental does not fit the album, while "Here We Are in the Years" is poorly arranged, and I did not like his voice. Also, "Trip To Tulsa' is too much like Dylan's "115th Dream," and this detracts from it.

"Neil Young" is an album for all Springfield fans and one for those who like well-written songs with quiet instrumentals.

No Credit Risk (Continued from page 1)

Russians were through with Ru-

Caltech's PME continued a trend evident in all simulations since mid-1966. Players representing the U.S., whether amateurs as here, or government officials from the State and Defense Departments, or faculty in colleges, have played a passive role, exhibiting what Dr. Edwin Munger has called a "Vietnam Syndrome," an unwillingness to involve the nation abroad.

Dr. Munger, serving in fifth year as faculty advisor to the exercise, and Guy Smith, head of the Control Board and organizer of the game, both stated that they considered this year's game a success although in Smith's words, "We blew a few things." Participants, especially team leaders, are asked to give written criticisms of the game to the YMCA, to be passed on to next year's "God". Aspirants to that position should talk to the Y sometime this year or first term next year.



Night Depository Personal Loans Real Estate Loans Safe Deposit Boxes Savings Accounts Travelers Checks Trust Services U. S. Bonds

Auto Banking Center at Colorado and Catalina Office, 1010 East Colorado and Citizens Commercial Trust & Savings Bank of Pasadena, hours: 9 to 4:30 daily; 9 to 6 Fridays

PASADENA

Head Office: Colorado and Marengo Colorado and Catalina Office: 1010 E. Colorado LA CANADA La Canada Office: Foothill and Beulah

Citizens

Commercial Trust & Savings Bank of Pasadena

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION Member Federal Reserve dystem



ABCS-681

Who can survive too long a journey such as this?

Ford Theatre "TIME CHANGES"

A Ford Theatre Presentation



ABC RECORDS INC. NEW YORK BEVERLY HILLS DIST IN CANADA BY POLYDOR RECORDS CANADA. LTD.