

Luxemburg New Math ExO

by John Fisher

Caltech can and should become a powerful instrument for change in our society feels Dr. W. A. J. Luxemburg, professor of Mathematics and new executive Executive Officer for Mathematics. Dr. Luxemburg, who replaces Dr. Marshall Hall, Jr., is a native of the Netherlands who came to Tech in 1958. A graduate of the University of Leyden, he received his doctorate at the Delft Institute of Technology and then went to Canada on a post-doctoral fellowship, coming to Caltech after serving two years at the University

of Toronto.

Analyst of Education

Dr. Luxemburg would like to see more classes at Tech taught on a seminar basis rather than as lecture courses. There should be more research opportunities for undergraduates, he says, and more emphasis should be put on helping the student to really comprehend the material.

He sees the present system where the student is tested six times a year as actually harmful to the learning process. In comparing the process to planting a bean in a

Continued on Page Two



Dr. W. A. J. Luxemburg

EPC Polls Shows Students Favor End Of Required PE

The results of the EPC poll on the physical education requirement taken at the end of first term were tabulated Sunday, Jan. 11. Of 368 respondents, 144, or 39%, felt that there should be a P.E. requirement at Caltech and 224, or 61%, felt that there should not.

At the same meeting, the EPC voted to recommend to the faculty that the P.E. requirement be abolished. A formal proposal will soon be drawn up and presented to the Athletic Council and the Faculty Committee on Athletics and Physical Education.

Poll Results

The poll results of primary importance to the committee in this decision were those of question 3: Do you believe that there should be a physical education requirement? The results, when broken down by class (question 1) were:

Class	Yes	No
Freshman	26 21%	83 79%
Sophomore	43 39%	67 61%
Junior	40 56%	30 44%
Senior	27 51%	26 49%
Random	8 31%	18 69%
TOTAL	144 38%	244 62%

Athletes Considered

Also considered were the number of students engaged in varsity or interhouse sports or regular unorganized physical activity (questions 2b, c, and d). 80% of the freshmen responding are involved in one of

these extracurricular programs, 69% of the sophomores, 66% of the juniors, 77% of the seniors, and 74% overall.

The committee recognizes a possible ambiguity in the phrase "regular unorganized physical activity," especially in light of some students' negative answers to question 2d and inclusion in their comments of the fact that they are frequent tennis players, for example. The results were accepted as marked.

Of Interest

Other comments on the poll questionnaires were also of interest to the committee. Other data from the poll was not considered in the decision, but will be made available to other bodies for consideration of the question.

The committee vote to recommend abolition of the requirement was as follows: 8 in favor (Abarbanel, Anderson, Felland, Horning Kahn, Kaufman, Odlyzko, Ross), 2 opposed (Williams, Yeung), no abstentions.

Glee Club Dir.

Hospitalized With Double Pneumonia

by Paul Levin

On Friday January 9 it was learned that Mr. Olaf Frodsham, the director of Caltech's Glee Club, had been hospitalized with double pneumonia. He is now at the Glendale Adventist Hospital.

The Beat Goes On

Although its director was incapacitated, the Glee Club performed for some of the Institute Trustees late Sunday afternoon. For this concert the group was conducted by Mrs. Priscilla Remeta, the assistant director. The thirty-minute program included both sacred music and light material such as "Dem Dry Bones Gonna Rise Again" —complete with all of the sound effects. Afterwards the singers received many favorable comments from the Trustees and their wives.

This was only the second time in seventeen years that Mr. Frodsham had missed a concert. Considering that his principal position has not been that of Glee Club director, his devotion to his job is amazing. His present illness will probably require a ten-day to two-week stay in the hospital and then several weeks of rest at home. After that he should again be able to take over the reins of the Glee Club, one of the best public relations groups connected with Caltech.

Caltech Bridge Tourney Friday

This Friday night at 7:30 the Caltech Qualifying Round of the Intercollegiate Bridge Tournament will be held in Clubroom One of Winnett. The top two partnerships (three if more than eleven tables compete) will continue to the Regional Playoff in Fresno, with a generous share of their expenses paid by the Institute.

Entry is one dollar per contestant (but only fifty cents for ASCIT members). Please reserve your place by signing up on the bulletin board in Winnett, as technical reasons make it desirable for us to know about how many pairs will be entered.

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The CALIFORNIA Tech

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Biology OKs Scholars Program

by Robert S. Fisher

The notion of a Scholars' Program at Caltech has been raised many times over the past few years. There is reason to hope that such a program may soon become unstuck from the drawing board. The Faculty Board recently approved a proposal from the Biology Curriculum Committee (under the chairmanship of Dr. Wood) which would establish a course of Independent Study in Biology for a trial period of two years.

In outline, the Program would function as follows: Applicants would submit a proposed individual study plan in the spring of their sophomore year. It could include course work, independent study, laboratory research, and other activities. Each student would be assigned a small committee of faculty members to advise him and monitor his progress during the following two years. During this time the student would be excused from standard course requirements. He would assemble a portfolio, describing projects undertaken and carried out, and evaluating his own work and learning experiences. The advisors would also include their feeling on the student's progress. The portfolio would be used by his committee as the basis for granting a degree and supplying recom-

mendations. The plan is open to all Biology majors in good standing.

Independent

Though the student is not constrained by option requirements, his advisors can, if they chose, insist that he acquire familiarity with certain areas and pursue at least some subjects in depth. For this reason, "Individual" might be a more descriptive word than "Independent." Should someone decide to return (or be returned) to the normal curriculum, his committee would determine the remaining requirements for graduation.

Because option credit would be given on a "pass-fail" basis, the faculty as a whole must revise their previous ruling that major courses be graded. A vote on this should be forthcoming soon its passage would make the program official. No other faculty or Institute requirements (eg. Humanities, Feynman Physics, etc.) are changed.

For the Future

It is not known yet how many students will apply if the plan is accepted. The number is somewhat limited by demands on faculty time and energy.

Also undetermined is the effect an Independent Study Program in Biology would have on future curriculum changes in other options. On one hand, the machinery for

passage may have been oiled. On the other hand the Biology Division is smaller and somewhat more flexible than many of the other divisions. Nonetheless, if the idea proves sound, and the program successful, it is likely that all options will have to consider how such an experiment might function within their own domains.

Love, War, Politics All Fair Game In Y Programming

by E. Gansner

A full schedule of events, from sex to Biafra to the California gubernatorial race, will highlight Caltech YMCA doings from now to the end of third term.

The "education of the governor" idea, first conceived with the Y-sponsored visit of Jesse Unruh, will possibly be continued. Candidates Alioto and Reagan have both been invited to visit Caltech for several days. Reagan appears interested, and there is a reasonably good chance that he will accept. No word as of yet has been received from Alioto.

Y (not) Sex

The second phase of the Y's sex program will take place in mid-February with a couples conference and

a relationship workshop. The two-and-a-half day conference will be held February 13-15 at the LA Times Training Center in Brea Canyon. The relationship workshop will occur the following Saturday at the Altadena YMCA.

The conference will basically be an encounter weekend in which 20 married or non-married couples explore and try to deepen their pair relationships. Verbal and non-verbal communication and small group workshops will be the principal media of exploration. Openings for the conference are still available.

Y's How-to-Meet-a-Girl

The one day workshop will allow students to study and learn how to meet and get to know persons of the opposite sex. It will not be an encounter lab; rather, it will work with larger groups, breaking into pairs and singles. Psychodrama, story-telling and dance exercises are some of the techniques to be used.

Sam and Heather Keen will guide the Workshop. Sam Keen is a modern theologian, philosopher and author. Heather is an expert in the field of dance. Both are skilled and experienced in this type of workshop.

The Speaker for Lunch Bunch

International scenes and views of the urban crisis will form the main topics of this term's Y Atheneum Luncheon Forum. Eastern Europe, Biafra, Cuba and East Africa will provide subjects along the international line with ghetto job training, local government, the police and the work of the poverty agency to be offered as areas pertinent to the current urban crisis, with the emphasis on Pasadena. The speakers will include Dr. Robert Oliver, associate professor of economics at Caltech and Robert McGowan, Pasadena's Chief of Police.

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News Briefs

IHC Faces Building Deadline On Move

The Continuing Drama of the IHC (?) Transplant

Things seem to be happening at breakneck speed, as far as IHC is concerned, however, hard news still lacks. First off, we wish to correct a piece of misinformation which appeared last week. Apparently, IHC faces a deadline of the end of this month or soon thereafter on their decision. This is due to the necessity of getting their buildings started.

Last Friday, the faculty held a full-dress meeting concerned solely with the IHC question. According to one ranking faculty member, "I don't know what will happen." The Trustees were similarly noncommittal after their meeting Monday.

Incidentally, the results of the poll of student opinion conducted on the issue proved to be highly favorable to IHC. When asked if they wanted to affiliate (in some way) with IHC, the undergrads

replied "yes" by a vote of 308 to 70.

Trustees Ate It In Student Houses

Last Sunday, the Caltech Board of Trustees discovered a few of the many facets of undergraduate life at Tech. First, they enjoyed a Glee Club concert in the Athenaeum. One Trustee commented that if the Glee Club had a good business manager, they could solve the Institute's financial problems by selling records!

Following the concert, the Trustees then enjoyed (?) dinner in the Student Houses. Many Trustees stayed quite late to converse with students about life in the Houses and about IHC.

Art for Hire at Master Smith's Office

Muriel Williams is now running an art exchange program through

Dave Smith's office. If you have art prints which you want to have find good homes, or if you want such prints for your room, see her in that interesting little office next to Lloyd House.

Think Twice — Bonner Advises

According to information released (unleashed?) on the *California Tech*, the female applicants, who currently number about forty, are highly deserving of the title "female." A total of about 100 applicants of this very interesting variety are expected by the time all the dust settles.

SENIORS: Portrait Appointment Reminder

Be sure to call Kent Studios (799-7337) for picture appointments this week and next. All pictures should be taken by Friday,

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Editorial

Information and Awareness

For several years preceding this year, the Associated Student Government at Caltech has been characterized by active and enthusiastic involvement in significant interests and projects. We do not doubt in the least the good intentions of those creating the projects; neither do we minimize the many beneficial effects of expanding interests.

Unfortunately, these projects have, in the proverbial sense, "bitten off more than they can chew." We have no exact figures as yet, but there is significant evidence that ASCIT-sponsored projects have accumulated large debts—debts which the student government cannot possibly be prepared to meet fully.

On top of this ignorance, which we believe could have been avoided by careful and regular supervision, the ASCIT BOD seems to be unaware of the gravity of another more traditional function.

Last year the *Big T* would not have been published if it were not for the ambitious and competent labors of only two people. This year, both of these gentlemen are graduating. It is the function of the BOD to recruit the Business Manager of the annual. They have consistently avoided and evaded this task. If this officer is not chosen soon, there will be even less chance of publishing a financially solvent yearbook.

The *California Tech* hopes that the BOD will, in further transactions, exhibit more of the responsibility with which it has been entrusted.

—Ira D. Moskatel

A Funny Thing Happened

Radicals Invade Meeting Of Scientists

by Harry Shipman

For the first time in recent history, the annual meeting of the American Association for the Advancement of Science (AAAS) was marked by an attack on the "Scientific Establishment" by young radical scientists. The radicals attempted to make the AAAS take a stand on political issues such as the Vietnam war, women's rights, and the repression of the Black Panthers.

The radicals failed in the main focus of their action. The AAAS council failed to act on any of the resolutions proposed by the radical group. No member of the council

introduced the resolutions so that they could be voted on. The council did pass a resolution, however, which was not proposed by the radicals, asking Harvard biochemist Mathew S. Meselson to investigate fully the ecological effects of the use of defoliants in Vietnam. Dr. Meselson has gone on record as being opposed to such use.

Strong Impact

The radicals had a very strong impact on the meeting. In some of the more controversial symposia, panelists who represented conservative points of view were subjected to embarrassing questioning and occasional heckling. In the sym-

posium on genetic engineering, for example, Jim Shapiro, leader of the Harvard group which isolated the lac operon, successfully demanded an opportunity to express his "grave apprehensions of the immediacy of the dangers of genetic manipulation." His views were quite different from the "complacent" views expressed by the panelists.

It seemed to this reporter that a large number of scientists at the Boston meeting were sympathetic with the aims of the radicals, if not with some of their tactics. Many seemed impatient with the detachment which has characterized AAAS meetings and felt that the time for discussion had ended and the time for action had begun. However, the upper-echelon executives of the AAAS, as indicated by their refusal to act on the resolutions, felt that the AAAS should remain a forum for discussion rather than a vehicle for action.

Credit, No Credit System

by Etaoin Schroedlu

Ever feel frustrated? Confused? Upset? If so, you are normal. Frustration and confusion have always been a notably present facet of the Caltech experience, for almost all individuals and for a variety of reasons. There has been a great deal of argument about some of these reasons, but there seems no doubt that some of the frustrations of Caltech, at least, serve no useful purpose and are unnecessary. So I am glad to see that the normal run of bitching about Tech has recently shown at least the promise of concrete improvements. Some of the recent letters to the *Tech* have indicated these feelings of frustration and, we hope, will lead to discussions and improvements of the worst facets of the Caltech scene.

One of these facets is the grading system. I personally favor an abolition of graded courses in favor of a credit-no credit system, with no record to be kept of courses taken for which credit is not received. As this move is probably too revolutionary to be obtained immediately, an intermediate step of an A-Pass-Fail system would be acceptable.

I believe that the current grading system tends to place improper emphasis on the earning of grades, to the detriment of intellectual interests. The regimenting of courses into near, term-size packets, to be taken or not taken during particular time intervals of time, makes it necessary that most students devote

their energies to the particular courses being taken and to no other academic interests. This is bad.

It is also obvious that the 'required courses' system should be replaced in fact by a flexible 'good education' system, which requires less regimentation and provides more opportunity for the individual to pursue personal interests and make personal choices. In theory this is permitted now by the Institute, in fact no one knows this or can ever make use of it. (Example: is AM 95 really necessary to be a good engineer? But try to get out of taking it.) Further opportunities should be permitted to do academic work in areas which have not yet been adapted to our course schedule, such as some of the work now being done in JPL programs, urban studies in Pasadena, Y programs of academic value, and such. The idea then would be that, in order to receive a degree from Tech, the student would have to convince people that he knew things, instead of merely accumulating grades as is done in the present situation.

I believe that adoption of these changes in Tech's academic system would create more mature, better rounded individuals who would have had at least the opportunity to organize an enjoyable, informative, diversified and useful four years (or more) at Caltech, without necessitating that our hallowed academic standards be diluted.

Luxemburg On IHC Move

Continued From Page One

pot, expecting it to grow, and then pulling it out every other day to check it., Dr. Luxemburg said he would prefer to the students tested only once or twice a year, if testing is necessary at all.

He says that a student does not have time to learn anything when he is forced to compete with his fellow students every five weeks. If most of the present testing were removed, Dr. Luxemburg feels, much of the pressure on the student would be removed, allowing him to concentrate on developing a better understanding of the material.

Requirements:

When asked his opinion of the Ma 1 and Ma 2 requirements, Dr. Luxemburg replied that he thinks that they were necessary in filling the minimum requirements of mathematical knowledge for any scientist and went on to point out that most students took further math courses even if they were not Math majors. He prefers to see the courses as a compromise between those aspects which would interest potential Math majors and those which would be of more immediate interest and use to non-Math majors.

Dr. Luxemburg feels that the emphasis should be on creating a good understanding of the concepts—on establishing a solid background upon which to work—and then on

practicing technique. The only way to develop proficiency, he says, is to practice, and many problems that may perhaps seem irrelevant are helpful in developing useful techniques. He realizes, however, that although the present courses are very good, there is always room for improvement, and he is open to any suggestions.

IHC Question

Since the topic is being discussed so much these days, Dr. Luxemburg was asked about his thoughts on the IHC question, and he gave a very concise and rational answer. He considers the student house life to be very unnatural, and perhaps even detrimental to the undergraduates living on campus. He sees the youth of today as far more mature than those of his day wanting to get involved in the human problems of the day. They find it very hard to do so at Caltech.

Bringing in a girls' college of humanities would not solve the problem, he says. Caltech is unique, he claims, and to affiliate with IHC would be a mismatch. If the Institute cannot supply the missing element, he finds it hard for a school like IHC, which is obviously of a lower caliber, to stir the students at Tech into action.

He favors, instead a plan to update the Humanities Division at

LETTER (of sorts)

TECH Blows It Again — Sorry!

Dear Sirs:

Space Filler in the *Tech* is O.K. (and sometimes even interesting), but blark!! Repeating an article from a previous *Tech* is something else. I am referring to the article by Harvey Risch in "The Critical Ear" in the *Tech* of last Dec. 11, which

appeared again in the Jan. 8 issue. Please use this letter for space filler, if needed. sincerely, David Hermeyer

Ed. Note—Oops! One of our layout experts misplaced the story. If Mr. Hermeyer noticed, the story even had some of its typo's corrected. We are ecstatic in the realization that the *California Tech* is read carefully. (Note: see full page ad last issue for causes of above problem.)

EDITORIAL POLICY

The opinions expressed herein are solely those of the writers under whose by-line they appear. Only the upper left hand portion of this page represents the editorial opinion of the CALIFORNIA TECH and the undersigned writers. All letters received by 6:00 p.m. Monday evening will be considered for publication on a FIRST COME, FIRST SERVED basis; the CALIFORNIA TECH reserves the right to cut letters to a maximum length of 300 words if the context of the letter can be preserved. We disclaim all responsibility for errors in editing, printing, or timing of the letters received and/or printed. Letters received from off-campus as well as all stories will not be returned.

—The Editors

FRANKLY SPEAKING

by Phil Frank



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David Miller

Progress Slow, Blue Balls

by Robert Geller

Harold Blue, chief Caltech negotiator at the deadlocked SALT (Sex And Liberal arts Talks) between Caltech and IHC told the *California Tech* that there was still no sign of a breakthrough in the lengthy discussions. In an exclusive interview at Los Angeles International Airport, Mr. Blue explained some of the reasons for the disappointingly slow progress of the merger talks.

In spite of the many factors which would seem to be conducive to fruitful negotiations—the plush seaside villa on the fashionable north shore of Jamaica, the exciting nightlife, the excellent hunting and fishing of the mountainous interior—the ground has not yet been cleared for discussion of substantive issues. “Truthfully,” declared Mr. Blue, “the talks are still stalled over the question of who pays the servants.”

To date, the only question even marginally pertinent to the proposed merger which the delegates have resolved, is the shape of the bargaining table. The original

Caltech proposal of a two-dimensional projection of the 4f orbitals was rejected immediately because of violent objections on the part of local Carpenter's Union. The first IHC proposal, two parallel tables, was rejected by the Caltech delegates as “too unfeeling.” Eventually a compromise table arrangement, closely resembling two outstretched thighs, was reached by the two parties.

In spite of all the amenities which would lead to casual observer to conclude that delegates were enjoying the ideal life, the swinging afterhours social life has created a few problems. “IHC had to run through five confessors before they finally found one who could handle to positions,” Mr. Blue reported, “The first four just couldn't hack it.”

As Mr. Blue was leaving for the second round of negotiations there was one indication that the long impasse was about to be broken. “The landlord just tripled the rent,” Mr. Blue indignantly complained, “and if we don't get any more money soon we'll all have to move to Motel Six.”

Chess Buffs Joust Friday

The 1970 Tournament for the Championship of the Pasadena Chess Club will begin on Friday, January 16.

Place: The Athenaeum, 551 South Hill, Pasadena.

Type: A Five Round Swiss.

Time Limit: 40 moves in 2 hours.

Entrance Fee: \$2 (Membership in the club is required.)

Prizes: Winner's name is engraved on permanent trophy. Five additional place and class prizes.

Time: Play to begin at 8:00 p.m. Registration at 7:30.

For further information call: Dr. Richard Lewis, SY3-5192 (office) or SY9-7123 (home) or Monty Cowdrey, 798-4809.

Teach-Ins Planned On Environment

A National “Teach-In” on the Environment, sponsored by Senator Nelson (D-Wis.) and Representative McCloskey (R-Cal.), will be held on college campuses across the country on April 22. The idea is to involve students in suggesting specific projects to improve their local environment and to discuss important local and national issues.

Next Monday, January 19, at 7:30 p.m., a group of undergrad and graduate students will hold a meeting in Clubroom 1, Winnett Student Center, to organize Caltech participation in this national event. This participation might range from a single day's Teach-In to a week-long attempt to create more “ecological awareness” in the Caltech community. All interested students should attend this important organizational meeting and/or contact: Jerry Yudelson (grad) at 795-2932 or Paul T. Wegener (Sr.) at 797-3621.

Mnemonics For Fun And Mney

For frosh who are not computer trolls (and anyone who has managed to survive at Tech for an extended time without being hooked by the blinking machines), I should explain that mnemonics are usually unpronounceable acronyms which are used in systems programming to indicate machine commands which are just strings of numbers (in this case, “hexadecimal,” or base-16 numbers where the digits have values from 0 to 15 and are written 0 to 9, A,B,C,D,E,F) so that a command which might be described as “add the contents of register 15 to register 8; keep the result in register 8,” is a little easier comprehended as AR,8,15 than as

1A8F.

AR stands for Add Register; others are BSLE, Branch if index is low or equal; TRT, Translate and Test, etc. There are about 150 different ones on the IBM System/360 instruction set. (Anyone actually interested in finding out about such things should ask a friendly computer troll.) Naturally, it has long been a favorite pastime for programmers to think up mnemonics with strange and wonderful meanings, and new meanings for old mnemonics. A varied selection of mnemonics I have not seen before:

BAL Burn Assembler Library
CR Confuse Royally

ZAP Destruct System
DDR Distribute Data at Random
AWR Add Within Register
HIO Heap Insults on Operator
TS That's a Shame
BB Bypass Buffers
PMT Punch Magnetic Tape
GD Gouge Disk
SM Simplify Multiplexer
DOS Delete Operating System
SPS Scramble Protected Storage
SC Swim Channels
EC Eat Cards Whole
FLCK Go to the Beach
SOC Suicide of Citran

News Briefs

ROTC Controversy Grows Around Nation

Jan. 23. Coat and tie are required. Also, get someone to do your write-up, SOON.

Pasadena Girls Want Tech Tutors

The Pasadena YWCA would like math tutors for Job Corps girls on Monday and Tuesday evenings. If you have an hour or two a week to help these young ladies out, contact the Caltech YMCA for more information.

On the other hand, if you would like to do some typing on Monday or Tuesday evenings, this work is also available. Contact the Tech office directly downstairs.

ROTC Controversy Growing

(ACP)—As one branch of the federal government this month urged colleges and universities to become far more involved in Reserve Officers Training Corps programs on campus, another branch threatened to withdraw ROTC units and Defense Department funds if they don't.

In three developments:

A special committee on ROTC, appointed by Secretary of Defense Melvin R. Laird, urged institutions to take a more active role in devising ROTC curriculums and in appointing ROTC instructors.

A House Armed Services subcommittee said it was a waste of time to keep ROTC programs on campuses where resistance to them is high, and recommended removing the program and cutting off Defense Department funds to such campuses.

The House of Representatives passed a military procurement bill that requires the Defense Department to file reports to Congress 60 days before awarding any research contract or grant to a college or university. The reports would summarize the institution's cooperation in all military and defense matters.

Drafted Graduate Students Can Finish Academic Year

(ACP)—The Administration has taken a step toward easing the impact of the draft on graduate schools and their students.

President Nixon signed an order that would permit graduate students called for induction into the armed services to complete an academic year if they were satisfactorily pursuing their courses of study. Previously, graduate students were permitted to complete only the semester during which they were called for induction.

Private College Facilities Found Exceeding Need

(ACP)—After a period when all

types of colleges and universities were said to have a shortage of physical space, the first survey of higher education facilities in 12 years now indicates that private institutions have slightly more room than their estimated needs.

The survey found, however, that public institutions have large deficiencies and that higher education as a whole lacks 68-million square feet of needed space.

Partially on the basis of the survey, a study group of U.S. Office of Education has proposed a major recasting of the federal program that helps finance the construction of higher education facilities.

The survey, which was conducted by the National Center for Educational Statistics, showed that public institutions have 366-million square feet of space, compared to an estimated need of 441-million square feet. Private institutions were found to have 209-million square feet, compared to an estimated need of 202-million.

ROTC is Primary Issue in October Unrest

(ACP)—While most student protest activity during October centered on the Vietnam Moratorium, a scattering of other protests occurred on U.S. campuses.

Many of those protests were related to the Reserve Officers Training Corps. For example:

At the University of Puerto Rico, 33 students held a hunger strike in support of demands that the university ban ROTC and lift the suspensions of seven students accused of burning and ransacking the ROTC building. There were several protest marches, and ROTC drills and marches were suspended for the rest of the semester.

About 75 persons forced their way into the ROTC building at the State University of Buffalo and burned records, overturned furniture, and smashed office equipment.

At the University of Washington about 25 persons ran through the Naval and Air Force ROTC buildings spraying paint on walls and furniture. Two military officers were struck in the face with paint cans during the demonstrations.

A Molotov cocktail was thrown into the Naval ROTC office at Columbia University, forcing 250 students and 20 female guests to leave the building.

In Wisconsin, 53 Ripon College students walked out of a freshman ROTC class in a protest against compulsory ROTC. Male students at the college are required to take one semester of ROTC.

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COMPREHENSIVE SUMMARY APPEAL PROCEDURES

Warning—To the best of our knowledge, all the information in this column is accurate at the present time. However, judgements by the courts or changes in the regulations often occur. A counselor or lawyer should be consulted before taking any major action that will affect your Selective Service status.

More Lottery

Some states, including California, have been inducting 19 year old registrants for several years under the old order of call which specified that registrants between the ages of 19 and 25 inclusive be called, oldest first. Considering this, it is highly probable that such states will run through all the lottery numbers this year and start inducting registrants who will have turned 19 after January 1, 1970, oldest first. Such students should not assume that they are safe because they have not yet received a number and, if trying to avoid requesting a II-S, they should request it as soon as it becomes apparent that their board will reach number 366 in the near future.

Appeal Process

No attempt will be made in this article to describe the extra appeal measures and rights available to a registrant seeking deferment as a conscientious objector or for medical reasons. These topics will be treated in later articles.

As stated before, all communication with your local board should be in writing, a copy should be kept, and the letter should be sent certified mail, return receipt requested. The following material is taken from a memorandum entitled "Suggestions Re Appellate Procedures..." by Peter Marx in the draft corner of Millikan library:

Roughly speaking, the basic appellate procedures in challenging a classification are the personal appearance before the local board, and, thereafter, if relief is not obtained, the appeal, where the file is sent to an appellate board but where there is no appearance. The personal appearance can be waived and the appeal instituted right away, but rarely is this procedure recommended.

Personal Appearance

The appeal process starts when the registrant receives a notice of classification from his local board.

He then has 30 days in which to request a personal appearance before his local board (or, should he for some strange reason wish to skip the personal appearance, an appeal to a State Appeal Board.) His letter should state, "I request a personal appearance." Do not use the words "appeal" or "personal appeal" in requesting a personal appearance (EXCEPT AS NOTED BELOW).

The registrant can request that he be granted an interview with the government appeal agent attached to his local board in order to discuss his case before the personal appearance. Should the appeal agent prove sympathetic, he can be an invaluable ally through both the weight of recommendation and his power to appeal for you even after your 30 days have elapsed. However, since he serves as an advisor to both the registrant and the board, you should avoid giving him any information that could hurt your case. Ask him what evidence to submit, what regulations and statutes apply, what the board will ask, and if he will intervene in your behalf.

Travel Time

Where the local board is at some distance from the current residence of the registrant, and it appears that it will be impossible for the registrant to travel to a personal appearance, to be safe, the registrant should add the line "I want to appeal my classification" the letter requesting the personal appearance. This will protect him in case he cannot appear for the personal appearance, i.e., he will not lose his right to the appeal, which, normally, takes place after the personal appearance.

After receiving the date for the personal appearance and/or interview with the appeal agent, the registrant should write and request either that the interview with the appeal agent and the personal appearance be transferred to wherever he is residing or that they should be postponed to allow the registrant to, e.g., raise money for the trip. There is no specific requirement that a personal appearance be transferred. Sec. 1623.9 of the Regulations indicates that the state director may transfer a registrant to another local board for classification whenever he deems it necessary in order to assure equitable administration of the Selective

Service law. The registrant may wish to write the state director with this in mind. It may be possible to transfer the interview with the appeal agent as well.

Alternative

If the personal appearance and interview with the appeal agent cannot be transferred or postponed, the registrant should request that an interview be arranged with a local board in the area in which the registrant resides, preceded by an interview with an appeal agent in that area, which could submit an advisory opinion to his own draft board. If none of these alternatives are accepted, the registrant should request that someone else be allowed to appear in his stead at the personal appearance, e.g., his mother.

The registrant can often arrange such an interview on his own initiative with the board in the area where he resides, and so advise his local board with the hope that they will accede to what he has accomplished.

Transfer of Appeal

Finally, if the board will accept none of the above and the registrant cannot appear, he should note that in his original letter he had appealed his classification, and ask that his

file be sent to the State Appeal Board. The registrant should request that it be sent to the Board having jurisdiction over the area in which he is living or working. In view of the fact that the appeal can be transferred, the registrant should also have the right to transfer an interview with an appeal agent for the purpose of taking an appeal. This is particularly significant in view of the fact that Sec. 1626.12 of the Regulations permits the person appealing to attach a statement to his file, setting forth in what manner he believes the local board erred, directing attention to information in his file the local board failed to properly consider, setting out in full information offered to the local board but which was not included in his file, etc.

STATE APPEAL

Assuming that a personal appearance is made, the board at that time may advise the registrant that they are going to rule against him, and, thereupon, he may be asked whether or not he would like the board to forward his file to the appeal board. The registrant should say, "I'd like to think it over." The reason for this is that the local board is required to reclassify a

registrant after a personal appearance, even if they give him the same classification he already had. He then has an additional 30 days from the date of mailing of this new classification to request in writing an appeal. Obviously this additional time may be invaluable for gathering more evidence and the registrant should not be tricked into losing it.

It is to be noted that the registrant should, after every personal appearance, interview with the appeal agent, etc., write down everything that transpired, however seemingly insignificant at any such appearance or interview. This may be very significant, particularly in the case of a personal appearance, where the board files its own resume of what transpired. These resumes of the board are often erroneous and prejudicial, and the registrant, after examining it, may find it advisable to submit his own version.

Evidence in Appeal

When the registrant makes his request for an appeal, his file is sent to a separate board known as an appeal board. This board reviews the entire file and makes its own determination as to the proper classification. The registrant is not

Continued on Page Six

Group Forums: Political Talk And Action

by Harry Shipman

A new opportunity for discussion of and action on political questions has appeared on the Caltech campus. The Forum, a loosely organized assembly of members of the Caltech community, has held two meetings, on November 25 and December 1. Discussion focussed on two main issues: ending the Vietnam war and increasing the involvement with political and sociological questions among the Caltech student body. The Forum is open to everyone; people presently in the group stressed the need for the widest possible involvement of the Caltech community in its discussions and activities.

The Forum is not directed towards any one particular program for action. As Jay Frogel, one of those who called the initial meeting, put it, "The main function of these meetings is to help anyone who has a good idea for action and needs some people to work with him." The members of the Forum hope that this approach will encourage more people to take part in political action at Caltech, either by developing and enacting their own ideas or through helping someone else with his program.

First Meeting

At the first meeting, there was considerable discussion of the forthcoming moratorium activities. Larry Benowitz and Dr. Herb Meiselman, both of whom were involved in the October and November moratoriums, said that the nationwide plans for the next few months' moratorium activities stressed the need for local activity as opposed to mass marches such as the San Francisco and Washington marches. An open letter supporting the Goodell resolution in the Senate (demanding complete troop withdrawals by the

end of 1970) is being circulated among the Faculty. Several people made proposals for action in the Pasadena community, such as leafletting the Tournament of Roses Parade and canvassing the city with a petition in support of the Goodell resolution.

The development of a social and political consciousness among the Caltech student body was also a major focus of interest. Several people discussed the possibility of introducing a course on science and society, which would stress the current problems in the social responsibility of scientists, into the curriculum. Most agreed that Cal-

tech can no longer afford to be satisfied with merely providing a scientific education, but that it must also provide an ethical and sociological framework for a student's future work in scientific research.

The recent actions of the Caltech administration encouraged many of those present, and there was hope that the current momentum towards increasing social involvement might enable the establishment of a really productive program in this area. It was felt that the widest possible involvement of students in setting up such a program is essential if the program is to be effective.

Sex Found At Y

Continued from Page One

Sex and Other Coming Things

Crystal-balling into the far future (third term), the Y has many programs already being planned.

Finishing the sex program will be a four-part series concerning the future of sex. The possible changes in values and mores, and the future use of contraceptives are two possible topics.

On faculty suggestion, the Y would also like to organize a "Futures in Science" program. This would create a faculty-graduate-undergraduate dialogue pertaining to the future of science and to careers in sciences. Hopefully, the program will help to better educate undergrads and grads as to which science they would want to concentrate in and also which sciences hold relevancy for him. Also, the "Physics is dead" rumor may be exploded. And, then...

If anything interests you and you would like to know more, check with the Y or call ext. 2163.



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BLARK !!!
IT'S ANOTHER
ODD
BODKINS

by Dan O'Neill



Head

Saga of Boy Wants Girl

by Paul T. Wegener

HEAD AND HEART or Two Virgins—Now playing at two locations, Pasadena and Hollywood.

The 1970 Living Theater season got off with a bang this year in Southern California—as if the Rose Parade weren't enough, they're staging a city-wide show with cast of thousands. This stylized melodrama combines the Absurdist tradition with Hollywood gala and splendor.

The plot follows the tried-and-true theme of adolescent love-at-first-sight. A young Catholic girl jilts her fiance because she doesn't want to leave the big city, but the wedding bells still ring in her ears. She meets the local brain, falls into his arms, and whispers softly "take me." He, a short-sighted, shy-sort-of lad glows red, mumbles shuffling "shucks me?" and straightway promises her a house and a thousand other things he can't afford. The plot thickens when he wakes up the next morning scratching, shaking his head and wondering what happened. She is the first girl who's ever paid attention to him, an emissary from the fair courts of Life.

The cast is superb, with the role of the rather plain girl with a nice personality handled very pleasingly by Katherin Ducoeur. The laurels, however, go to Citney Syens, an older man in the role of the boy-brain. It is generally difficult for mature men to act adolescent, but in this case the performance is so convincing that it is difficult to distinguish from reality. The gawky genius, with so little self-esteem or confidence, throws maturity and judgment to the winds to bask in

the glow of outside affection. A heart-warming scene!

This is where the plot snads as of now. The last scene available showed Citney, a welter of dour, lust and timidity, rationalising at full steam behind closed doors while the little lady sat patiently at home, sighing. As the scene fades, a chorus can be heard in the background:

Sopranos, warbling: And then we'll wed.

Basses, Beer-barreling: And then we'll bed.

We hope to discover soon, as the story unwinds, whether Citney has read the Pope's recent edicts on divorce and birth control?? Or whether Katherine and Citney can find marital bliss in a house with no doors?? Also, might not Citney's Army friends offend our sweet heroine's sensibilities?? We sincerely hope that this couple will find happiness and understanding, but we must agree with Citney's mother, "Why couldn't he just settle down with the nice girl next door?" No, he has to go out and fall head over heels with a complete stranger! He always was a strange boy, but this!"

That's all for now—I urge you all to watch and enjoy the once-only courtship, and if you can break through the pathos of bad melodrama, the laughter flows and flows. Keep your eyes and ears open!



COOL HAND GELLER

by Robert Geller

Last December I was fortunate enough to win the Pacific South-west Regional Knockout Championship, held at Coronado, Cal. My good fortune was playing with an excellent partner, former Caltech graduate student Bob McDonnell, and two superb teammates, Matt Bartosik and Barney O'Malia. Today's hand is an example of how well my partners played, first upsetting the top-seeded Soloway team, then going on to win the event.

Today's hand is taken from the semifinal match between our team and the Hoersch team. Bob McDonnell's exceptional defense on the hand defeated an ice-cold game contract played by John Strauch, one of San Diego's finer young players. The underlead of the queen and jack of clubs was the normal expert lead in such a situation, although it is not recommended by the textbooks. Strauch won the

North

S A 5
H 10 9 4 2
D Q 4
C K 10 9 7 4

West

S K J 9 4
H 3
D A 9 2
C Q J 8 3 2

East

S 7 6 2
H J 8 7
D K 10 8 6 5
C 6 5

South

S Q 10 8 3
H A K Q 6 5
D J 7 3
C A

The Bidding:

South	West	North	East
1 H	Dbl	3 H	Pass
4 H	Pass	Pass	Pass

Opening lead: two of clubs

club with his singleton ace and led a diamond to East's king. When East returned a trump this made it clear that declarer was not going to be establishing the diamonds for any

discards. Strauch took the ace of trumps and led a diamond to West's nine.

Remarkable Underlead

Now with the nine of diamonds, McDonnell made the remarkable play of underleading his club honors again. Since the lead of the deuce of clubs showed an odd number, Strauch decided to play West for five clubs to the jack trying to give his partner a ruff, apparently not realizing that if East had a doubleton club honor the hand was cold (ruff the club, draw trumps, ruff a diamond back to dummy, play the king, ten and nine of clubs, discarding three spades and losing only two diamonds and a club) and he rose with a king of clubs. Now when McDonnell got in with the king of spades he led a high club on which East discarded his last spade, setting the contract by overruffing dummy when declarer ruffed a spade.

Nick Smith

THE THIRD WING

As usual, California politics has taken a turn for the obscure. Mayor Joseph Alioto of San Francisco has announced that he will not seek the Democratic nomination for governor this year. He stated that he could not effectively be a mayor, run for governor, and sue *Look* magazine for libel all at the same time, and so He's not running. He stated that a recent poll (showing him behind Jesse Unruh in popularity) had no influence on his decision. He also maintained that his popularity had begun to recover from the effect of

the *Look* and other articles questioning his affiliations and dealings.

The announcement by Mayor Alioto leaves Assembly Minority Leader Unruh as the only declared candidate for governor. It is assumed, however, that Governor Ronnie will try for re-election. This will probably mean an ideological showdown along the same lines as the Johnson-Goldwater fight of 1964. If you will remember, it was at that time that Ronald Reagan made a classic television appearance backing Goldwater to the hilt and beyond. Soon, even though Goldwater lost, Reagan was obviously more active in politics, and eventually stepped into the governor's mansion when Edmund Brown lost.

Unruh, on the other hand, is similar to Johnson, although slightly more liberal. Both were influential legislators, leading the Democratic party, Johnson in the Senate, Unruh in Sacramento. Also, both had natural enemies on the conservative side.

Basically, both Reagan and Unruh have been campaigning for the 1970 election since the beginning of 1967, as soon as Reagan took office. This will probably be the most spirited and vicious campaign in a long time.

Another amusing announcement is that Dr. S. I. Hayakawa probably will not be running for the Democratic Senatorial nomination for the seat now held by George Murphy. It looks as if the Senate will be denied his powerful semantics in the near future, and also as if San Francisco State is stuck with him.

Senator Murphy will probably run for re-election, now that his doctors have given him a comparatively clean bill of health. If the Republican party backs him, he will probably win, since there is not any strong Democratic opposition as yet.

All in all, California politics are going to be amusing for the next year, and hopefully, the state will survive. It is at least an even chance that California will spend another few years under the Actor regime, unless the populace becomes a little less paranoid about Dirty Jewish Hippy Communist Monolithic Anarchists in the University and State College systems. Someday, the voters of California are going to vote intelligently about something, and the world will end with a thunderclap, as California slips into the ocean.



FREE TICKETS!

There will be special student discounts available for tickets to the three preview performances of Thornton Wilder's "Our Town," opening Feb. 12 at the Huntington Hartford Theatre.

Henry Fonda will head the all-star Plumstead Playhouse cast in the Pulitzer Prize-winning classic being presented at the Hartford through March 1 only.

Student body cards must be presented at the box office in order to receive discounts on the previews, which are set for 2:30 and 8:30 p.m. Wednesday, Feb. 11, and at 2 p.m. on Feb. 12.

A presentation of the Greek Theatre Association and the American National Theatre and Academy, "Our Town" is being produced by Martha Scott, Alfred de Liagre, Jr., and James A. Doolittle.



Songsters Chuck Mitchell, Jo Ellen On Ice This Week

There is another all music show at the Ice House, and it's a good one. The show runs through next Sunday, so I suggest you see it.

Opening the show is a singer by the name of Roy Harris. His style, manner and appearance are similar to Arlo Guthrie's, including the slouch hat. He did some traditional songs, a couple of recent his (such as "Helplessly Hoping") and some songs of his own ("Liquid Lady"). His guitar work is smooth and simple, and his voice easy and relaxed. If you like Arlo, you'll probably like Roy Harris.

Jo Ellen is a good as she was a few weeks ago at the Ice House. She does songs of her own and by others with equal facility and quality. Her guitar work is good, and she played the banjo number "Raider" in a way that would almost make Roy Clark jealous. I said a great deal about Jo Ellen before, but I think some of it is worth repeating. She is a Judy Collins type of singer, a folk singer with her own simple accompaniment. Her music runs the gamut of emotions, from things like "Dubuque Blues" to her happy "Morning Song." There are probably a few of you out there who won't like Jo Ellen's singing, but those are the type of persons who believe that the only two female singers worth mentioning are Janis Joplin and

Yma Sumac. I like Jo Ellen's singing, and I think most of you will, too.

The star of the show is Chuck Mitchell, a singer aptly described as a troubador. (No plug intended.) His voice is rich and deep, his guitar work flawless. Often, in between songs, or even during them, he would break into poetry, with excellent effect. He did a number of contemporary songs, some of them better than the original versions. These include "July, You're a Woman," "Just Like a Woman," and "Sisters of Mercy." John Stewart, Bob Dylan, and Leonard Cohen should all be jealous of the improvement since they wrote and performed the songs. Chuck Mitchell has excellent audience rapport, and is a true showman. It struck me as interesting that he finished one set with a song by Joni Mitchell, "Both Sides Now." I don't want to decide whose version is

Harris and is a true showman. It struck me as interesting that he finished one set with a song by Joni Mitchell, "Both Sides Now." I don't want to decide whose version is better.

All three acts are extremely entertaining, but I think that Roy Harris is overshadowed by the other two acts. If you get the chance, go to the Ice House soon.

—Nick Smith

Art Museum Expands Hours

Due to continuing high public attendance, the new Pasadena Art Museum will extend its gallery hours to 9 P.M. every Friday evening, acting director Thomas G. Terbell, Jr. announced. The museum is now able to provide free parking as well, Terbell said.

Effective January 9 the new hours of the major cultural facility, located at Colorado and Orange Grove Boulevards, will be: Tuesdays and Fridays, 10 A.M. to 9 P.M.; Wednesdays, Thursdays and Saturdays, 10 A.M. to 5 P.M.; Sundays, Noon to 5 P.M.; closed Mondays.

"Attendance since the opening of the new museum in November has far exceeded our expectations," Terbell explained, "although we did hope that something like this would

Luxemburg

Tech and make it related to the issues of today—arms control, Vietnam, racial strife, etc. He wants to give meaning to the social sciences. Dr. Luxemburg feels that Caltech is able to do this, if it really wants to.

Do Your Thing

He would like to see people in the Humanities Division teach what they do. Instead of having someone lecture on the history of Europe, the Institute should find people who are involved in the problems of

Continued column five

THE CRITICAL EAR

DEPARTURE by Pat Boone: Tetragrammaton, t-118

Unfortunately, this was not enough of a departure for the never-ending Pat Boone. Listening to it, one gets the impression that he is about to break into a chorus of "Big John."

This album consists of a number of excellently written songs, by some of the best writers of modern folk music. There are songs by Fred Neil, Biff Rose, Tim Buckley, John Stewart, and John D. Loudermill. Pat Boone doesn't seem to know how to handle these songs, or else someone was giving him bad advice on doing them. His version of John Stewart's "July, You're a Woman" is undoubtedly one of the worst I have heard of any Stewart song. He improves to the point of mediocrity on many of the songs, however, and even does a freaky ending on the last song on the album, one called "Friends." The sounds are something like what must be on the intercom of the Yellow Submarine.

Pat Boone says on the liner notes, "At least once in every man's life... he changes... And he makes a departure: not so much from

where he has been, but toward what he must be. And he will never be the same again." I'm afraid he didn't depart, because the only changes are superficial. He's the same again.

—Nick Smith

Messiaen: Et expecto resurrectionem mortuorum; Couleurs de la Cite Celeste; Pierre Boulez. Columbia MS 7356.

Olivier Messiaen, a French composer born in 1908, seems to have been pretty much accepted into the panoply of the "ARRIVED" composers. His music is most distinctly "modern" in many senses, and I think that to approach it in the same way one approaches even Stravinsky or Shostakovich will lead to a genuine let-down for the listener. As far as I can tell, Messiaen in these two pieces is trying to create an intensely personal vision of the prelude to the Resurrection of the Dead and of the City of God. He attempts to incorporate space and color into his pieces, so that they are totally

unmelodic in effect, but are rather more like "evocative noise." There seems to be some structure, but Messiaen feels, I think, that his statements should not be hampered by the structure, so that it tends to be unobvious, even hard to find. Since he had the composer's implicit blessing, Boulez' interpretation of these works is probably quite valid.

Personally, the works are, in fact, successful in creating something of the effect that Messiaen says he tried to incorporate into his music. Upon repeated listening, the works appear to become more unified in effect and seem to make more "sense," whatever that means. But to be able to accept this sort of music as pleasurable or meaningful artistic expression requires dedication and concentration on the part of the listener, and one should keep this in mind when considering whether to purchase the disc.

Appealing Ways To Avoid Draft

Continued from Page Four

entitled to appear before this board but he is entitled to submit additional evidence supporting his claim, which will be forwarded to the appeal board along with his file. Thus, he should make sure such evidence is submitted to his local board before it is sent to the appeal board. If necessary, when requesting the appeal, the registrant should ask that the file not be sent until he is able to get the evidence which he wishes to submit.

In the letter requesting the appeal, the registrant should additionally request that he be granted another interview with the appeal agent, and that his file not be forwarded to the appeal board until after this interview has taken place.

Procedures regarding taking an appeal in the absence of a personal appearance and with respect to a registrant residing in an area distant from his local board are discussed in the section on the personal appearance and will be discussed further in a later article.

AFTER THE APPEAL

If the appeal board rules adversely to the registrant, he should consider writing either the state or national director of Selective Service (or both) and ask that either of them request his appeal board to

reconsider. Sec. 1626.61(a) of the Regulations provides that either the state or national director may do so when he deems it to be in the national interest or necessary to prevent an injustice. Sec. 1626.61(b) provides that, at any time prior to the mailing of an order to report for induction or an order to report for civilian work and statement of employer, the government appeal agent, if he deems it to be in the national interest or necessary to avoid an injustice, may place in the registrant's file a recommendation that the state director either request the appeal board to reconsider, or appeal to the President.

Additionally, in the event of an adverse determination by the appeal board, either initially or on reconsideration, the registrant should at least attempt to appeal to the President, pursuant to the provisions of Sec. 1627 of the Selective Service Regulations. It is provided that the state or national director may take an appeal to the President

From column one
the world to teach about these problems, and to motivate the students to applying their scientific knowledge to the problems that threaten us. As in the other divisions at Caltech, where the courses are taught by those who are actually involved in scientific research, so the humanities courses should be taught by those who are actually involved in the humanities. An artist should teach art, he says, not an impartial lecturer.

Dr. Luxemburg would like to see many courses turned into seminars where problems, scientific or social, could be talked about and hopefully worked out. This would be in the greatest tradition of the Institute, and would help make Caltech even greater than it is.



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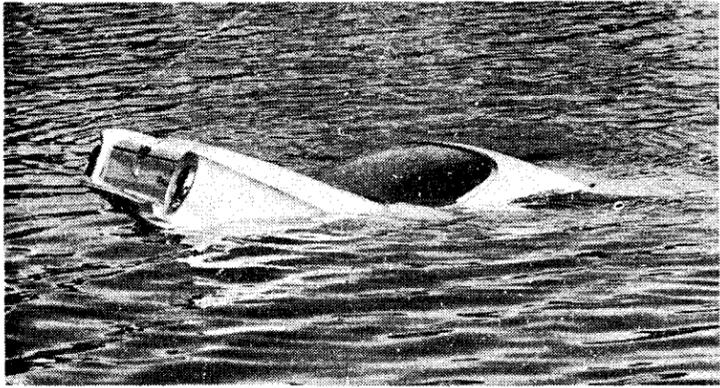
Coleman Series Brings Bartok Quartet to Beckman Feb. 8

On Sunday, February 8, at 3:30 p.m. in Caltech's Beckman Auditorium, Pasadena, the Coleman Chamber Music Association will present the Bartok Quartet.

All four members of the celebrated Quartet were born in Budapest in the thirties, and all four graduated from the Franz Liszt Academy with the highest of honors. The Bartok Quartet won the silver medal in the Schumann Competition in Berlin in 1960, first place in the International Chamber Music Competition in Budapest in 1963, and also first place in the

Liege Competition in 1964. In addition to their Quartet activities, Peter Komlos (violin), Sandor Devich (violin), Geza Nemeth (viola) and Karoly Batray (cello) hold leading positions in the Budapest State Symphony and State Opera Orchestra.

The program for the February 8 concert will include: Haydn's Quartet in F minor, Op. 20, No. 5; Bartok's Quartet No. 4 (1928), and Mendelssohn's Quartet in D major, Op. 44, No. 1. For ticket information, call 793-7043, or 793-5721.



Last words of a geo grad: "This talk about L. A. sliding into the seas is nonsense."

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Sir J. Reynolds

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The Tech



About Town

In the future, and hopefully even the present, this column will be devoted to telling you about upcoming events that weren't ex-

actly on your Beckman Calendars in last week's issue.

Ash Grove, at 816Melrose Avenue, is featuring the Stonemans thru Jan. 18. In case you didn't know, they are folk & western group.

The Golden Bear, down at 306 Ocean Blvd. in Huntington Beach, is open Jan. 16-18 with the Dillards. Only a true fan would drive that far.

The Ice House as you should have noticed in two other places, has Chuck Mitchell, Jo Ellen, and Roy Harris until the 18th of January. On the 29th, Tim Morgon rides again at the sign of the tong and note, 24 N. Mentor here in Pasadena.

Shelley's Manne Hole is the place that both of you jazz freaks are looking for. They have The Advancement thru Jan. 18, and Willie

BoBo starts jazzing on the 20th. **The Manne-Hole**, also featuring Shelley Manne himself on weekends, is at 1608 N. Cahuenga Blvd. in Hollywood.

The Whiskey A Go Go, at 8901 Sunset, is featuring Chicago (Transit Authority) and Gypsy until Jan. 18. B.B. King is showing up from the 19th until the 21st, with his incredible guitar.

The Pasadena Civic, has The Band in concert on Saturday, Jan. 24.

The Pasadena Rose Palace, at 835 S. Raymond, is featuring, on the 16th and 17th, Lee Michaels, Eric Burdon and War, Alice Cooper, and Messiah.

Royce Hall, at UCLA, is presenting Laura Nyro in concert on January 17th, at 8:30 P.M.

Tickets for all three of the above concerts are available at Mutual agencies and random other places often referred to as usual.

David Miller

Truckin' My Blues Away

Arrrrgh! The limitations of the printed (or VariTyped) word! I am getting tired of hearing music redone by big bands and big-name stars. But if I complain about it in print, how can I explain in words to anyone who has not heard it what annoys me about the way Jose Feliciano extinguished "Light My Fire?" Lots of people don't even like this kind of music; they are even aggressively uninterested in hearing it. Besides, the practice is nothing new. Someone once told me that "Stardust" had been recorded over 700 times, in every conceivable arrangement, and some

inconceivable to the normal mind (not to mention unrecognizable).

Still, people who think "Light My Fire" is noisy hippie-music trash were upset when Aretha Franklin sang "The Star-Spangled Banner" in a manner which might be approximated somewhat as follows:

ooooohh ssaayy y can seee

Typographical excesses like the above don't convey the sound, so I shall not burden the VariTyper.

slaves with reproducing any more lines like that. And if I want to convey the sound of instruments to someone who doesn't read music, I am reduced to approximating Feliciano like this: Guitar: "You knooooooowow that it would (plinky-tinky) beeee untruuuuuuuuuue (twang)..." So any witty (or whatever) comments I wish to make about people who record other people's songs will have to be made by the method of garble lyrics (or MGL).

Thus applying MGL to Glen Campbell recording the Cream's music: "Bythe time I get to (Phoenix)/ I'llbe where I'm goin/ 'Cause I lo o ove your su uuu uuu uunshine."

And Johnny Cash borrowing material from the Jefferson Airplane would (by MGL) create something like this: One pill makes you bigger/One pill makes you small/An' the ones you get in prison/Don't do/Nothin' at all/ Ask Alice down in Reno/ And just hear what she'll say..."(anyone foolish enough can actually sing these words to the tune of "Folsom Prison Blues").

Dean Martin has been doing songs like this for years, having sung such deathless lines as "Hello, young lovers, get out of my car!"

Light amidst the gloom! If I paraphrase the Beatles in Abbey Road this way: "Bang!Bang!Bang!-Bang!Bang! Maxwell's 'Quations flew out of his head, bang!Bang!-Bang!Bang! Maxwell's 'Quations made sure that he was dead."

Without a picture, everybody in Ph2a can imagine himself with a final in his hand and four holes in his head!

Hee Hee Ha Ha Ho Ho HOO HOO HOO!!!?%\$@thevalkyriesare comingthe valkyriesarecomingthevalkyriesarecoming

Play Offers Discount Tickets

There will be special student discounts available for tickets to the three preview performances of Thornton Wilder's "Our Town," opening Feb. 12 at the Huntington Hartford Theatre.

Henry Fonda will head the all-star Plumstead Playhouse cast in the Pulitzer Prize-winning classic being presented at the Hartford through March 1 only.

Student body cards must be

presented at the box office in order to receive discounts on the previews, which are set for 2:30 and 8:30 p.m. Wednesday, Feb. 11, and at 2 p.m. on Feb.12.

A presentation of the Greek Theatre Association and the American National Theatre and Academy, "Our Town" is being produced by Martha Scott, Alfred de Liagre, Jr., and James A. Doolittle.

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Peace Corps Recruiters to Visit Campus Soon

Opportunities For Scientists

In Peace Corps Explained

In the northern region of Malawi — a tiny, southern African republic — there is a saying:

Charu mpakati pose.

Roughly translated it means: the center of the Universe is wherever you happen to be.

Such a proverb might well have come from any of the 57 countries in Africa, Asia, Latin America and the Pacific in which Peace Corps Volunteers are working. There, and in villages throughout the underdeveloped world, a man's Universe begins with what he feels and ends at the limits of his senses.

The events of nature—their rhythm and occurrence—are felt to be related somehow to a man's life—his love and his hate, his moral conduct.

To speak of vectors or molecules is to speak of religious doctrine.

To touch a comeleon is to risk sickness.

To change one's methods of subsistence cultivation is to invite disaster.

A world view such as this has a certain psychic and social validity which the western world is only beginning to comprehend. But it is also peculiarly limiting. That so much of the world should continue to live in poverty, hunger and sickness when so much could be done is a parallel fact which Americans today find difficult to accept.

Science and mathematics are powerful tools in great demand in hungry nations throughout the world.

Science and mathematics graduates are urgently needed to help devise compelling methods of science instruction for use in under-equipped, rural schools in Africa, Asia and Latin America.

They are needed to help design and operate rural electric systems in Latin America.

And all of this must be done with a sensitivity and patience sufficient to inspire in those we serve a confidence in their own ability to improve their own conditions.

The Peace Corps has been sending such people abroad for nearly nine years.

In June, 1969, there were roughly 10,000 Peace Corps Volunteers abroad, working in 60 different countries. Of these, 197 were trained biologists, 96 were chemists, 31 were electrical engineers, 304 were mathematicians, 65 were physicists, 2 were statisticians and 1 was an entomologist.

Hundreds more, listed as teachers in Agency statistical summaries, had come from science and mathematics backgrounds in undergraduat colleges and universities.

The total number of recruits with mathemats, science, and electrical engineering backgrounds needed for programs beginning this summer will exceed 1,500. Some of the programs in which they are being asked to serve are listed below:

Peace Corps Volunteers are not invited abroad because anyone thinks they know all of the answers. They are invited more for the attitude which they bring to their work, a belief that lasting development and ultimately peace can best be achieved by small communities

of men working together to solve common problems.

Volunteers are invited, as one Ghana journalist put it recently, to "help us go the way we want to go."

This means a Volunteer must be ready to listen as well as to talk.

Each recruit receives intensive training in the language and culture of the country to which he is assigned. He also receives additional training in his particular skill. Inexperienced teachers assigned to education projects practice teach for at least three months before beginning work at their permanent posts.

Training is an essential and integral part of Peace Corps service. It marks the beginning of a process of learning, inquiry and self examination which will continue throughout a Volunteer's assignment.

A Volunteer serves abroad two years. He accumulates leave within his region of assignment at the rate of two days per month of satisfactory service. He receives a subsistence allowance sufficient to cover the cost of adequate food, housing, transportation, clothing and incidentals in his country. He also receives full and free medical care while in the Peace Corps.

For each month of satisfactory service—including training—a Volunteer accumulates a readjustment allowance of \$75 which is set aside for your return to the United States. This year the Peace Corps will ask that the allowance be raised to \$100 per month.

The basic requirements of Peace Corps service are:

- ...U.S. citizenship;
- ...over 18 years of age;
- ...preferably no dependents under 18 years of age;
- ...a strong interest in helping others.

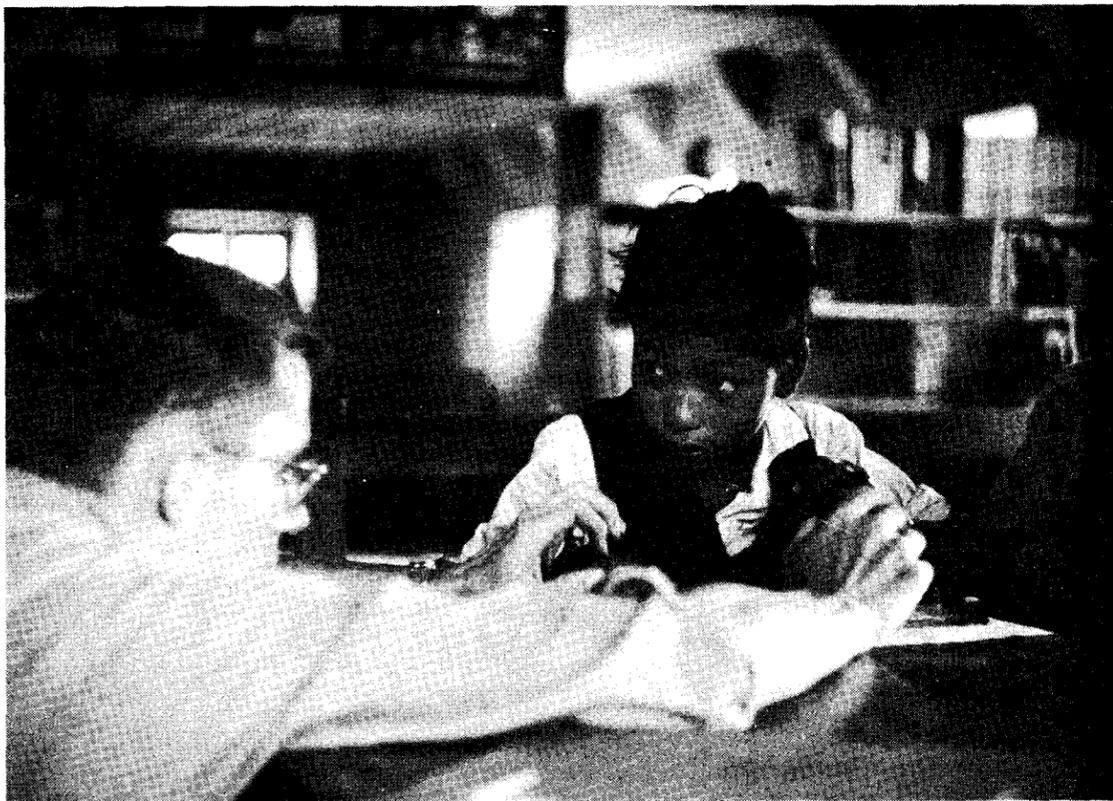
Why do it?

At the very least, service abroad as a Peace Corps Volunteer gives you an unprecedented opportunity to step outside of your own country and live another culture for two years. It offers you a chance to travel, to learn another language intimately, and to examine yourself in ways which may never be open to you again.

For a science or math major, the value of Peace Corps service now—before settling into a life-long career—is potentially great. It offers you an opportunity to discover the human parameters of technological and scientific progress, too often overlooked in our brash search for more knowledge and greater control over nature.

The late Max Born spoke often in his later years of the need for a humanized science.

"Science in our age," he wrote in his autobiography, "has social economic and political functions, and however remote one's own work is from technical application it is a link in the chain of actions and decisions which determine the fate of the human race."



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Research Opportunities At Physics International

Scientists and engineers at PI are conducting research programs that have already expanded the frontiers of several scientific fields. Prominent men of many disciplines and backgrounds have created a highly stimulating and productive atmosphere. The rapid growth in these programs has created several extremely challenging new positions. Coupled with this professional environment are the many physical and cultural advantages of the San Francisco Bay Area.

Career opportunities exist in the research areas listed for individuals with BS, MS, and PhD degrees, with or without experience.

- **Gas Dynamics**
High performance shock tubes, hypervelocity acceleration, aerodynamics, detonation phenomena, blast wave and fireball simulation, re-entry phenomena.
- **Advanced Pulsed Power Systems**
HV pulse generation, pulsed radiation sources, HV breakdown phenomena, ultra high current electron beams.
- **Stress Wave Propagation**
Dynamic response of materials, shock geophysics, equation of state.
- **Theoretical Physics**
Radiation transport, stress wave propagation, heat transfer, gas dynamics, MHD.
- **Nuclear Weapons Effects**
Vulnerability analysis, transient radiation effects in electronics, blast effects, hardening.
- **Electro-Optics**
UV, visible and IR measurements, effects of radiation on optical components.

Campus Interviews

Friday, January 16

For additional information please contact the Placement Office

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INTERNATIONAL

If an interview is inconvenient for you at this time please send your inquiry to Professional Employment Office, 2700 Merced Street, San Leandro, California 94577. We are an equal opportunity employer. Us citizenship required.

Life In Africa Exciting Peace Corps Techers Find

by Ira Moskatal

The newest chapter of the Caltech Alumni Association is in Sierra Leone on the west coast of Africa. It has two members, both recent graduates and both volunteers in the Peace Corps.

Frank Fujimura graduated from Caltech in 1967. Larry Shirley graduated last year with a combined major in mathematics and history; he was one of the top of his class. Within a week after graduating last June, Shirley found himself in Freetown, Sierra Leone.

For the next three months, Larry had to use all the ability to study that he had learned at Tech to master the geography courses and to learn the national language *Krio*. He taught in Freetown over the summer in one of the local secondary schools.

Practical Data

Along with the "intellectual" training Larry received were some good hard facts. Mesa, Arizona, his home town, is pretty different from West Africa. For an American tourist in a big city, it's pretty easy "not to drink the water." Larry had learn how to prepare the water and foods for drinking. He had to learn what illnesses he could expect and how to avoid them. He had to learn how to cure whatever he might encounter.

In the fall, Larry's training in Freetown was over. He then took a boat to Sherbro, an island of about 60 square miles 20 miles off the coast. Here he had to get acquaint-

ted with the people of Bonth, and learn their dialect, *mende*, which was somewhat different from *Krio*.

Larry has been in Sierra Leone for eight months now and he is teaching math for eighth and twelfth graders. Larry teaches math in English, but when he has to bargain with the townspeople for groceries, *Krio* and *Mende* sure come in handy.

Vacation Time

It is now the mid-year break. Larry and his roommate, another Peace Corps volunteer are taking advantage of the vacation to explore the island on a hiking expedition. They are stopping to talk with the villagers and to stay in the hamlets that dot the island.



LARRY SHIRLEY



The City of Bonth on the Island of Sherbo, Sierra Leone.

—photo by Shirley

Larry's father says that Larry "is maintaining the same enthusiastic and ambitious spirit that he had when he left for Sierra Leone. He is happy and finds his new environment most exciting."

After the midyear break, Larry plans to start a course in basic math for adults. He is bringing the idea of an evening school to Sierra Leone. Summers won't be dull either. Larry will be working on a summer project and then off on a month's vacation traveling.

Draft Questions Answered

Q. Explain the drawing and how the random sequence was established. A. On December 1, 1969 there was a drawing in Washington of 366 closed capsules. In each capsule was a slip of paper on which was written a month and a day of the year, for example, May 2, June 1, etc.

The order that these capsules were drawn will determine the relative position in the national random sequence of registrants born on all the dates of the year, including February 29. If May 21 was drawn first, all men born on May 21 would be No. 1 in the national random sequence. If February 29 was drawn last, all men with that birthday anniversary would be No. 366 in the national random sequence.

Q. How will this sequence be used by local boards? A. Each local board will assign numbers to its registrants who are I-A or who become I-A in accord with the national sequence. Some local boards may not have, at any one time, men with birthdays on every day. In such a case the local board would go to the next number. For instance, it might call numbers 1 through 5, then 7 and 8 because it had no men whose birthdays were on the day drawn sixth in the drawing.

Q. Why is there a drawing of the alphabet? A. This drawing randomizes the alphabet so that in instances where a local board has two or more men with the same birthday—and is required to order

one but not all of them for a call—it has a way to determine which comes first, second, etc., by applying the random alphabet to the names.

Q. Does every body get a number out of the first lottery? A. No—the first drawing will determine the random sequence number only for those men who prior to January 1, 1970 will have attained age 19, and not 26.

Moreover, the number in which a birthday is drawn will not be meaningful until an individual is classified I-A or I-A-0. Some men in the group who get a number from the first drawing may not be classified I-A until next year or later. In such cases, a young man's number will determine his order in the national sequence in use that year. For example, a young man's birthday is drawn No. 80, and he is now deferred for college, but loses his college deferment in June 1971, he will now be No. 80 in the national random sequence in use that year. **Q. How do new 19-year-olds get a number?** A. In 1970 a drawing of the 366 days of the year will be held. This drawing will determine the national random sequence to be used in 1971. The only registrants who would look to that drawing to determine where they stand in the national random sequence are those who turn 19 during 1970. **Q. How do you use more than one drawing?** A. The date of May 1 may be drawn No. 80 in the first lottery. This would be the number of a man who was in college during 1970, but graduated and lost his deferment in June 1971.

The date of September 11 may be drawn No. 80 in the next lottery. A man born on September 11 who was available in 1971 would be No. 80 in the random order. So would the first man whose birthday of May 1 was drawn No. 80 a year earlier. If both men were in the same local board they would be called on the same call or if one, but not both were required, the random alphabet would determine which one went first. **Q. Can a man whose birthday is drawn early in the drawing still join the reserve.** A. Yes. Just as now, he can join a reserve any time before the induction order is issued. **Q. What about volunteering for active duty?** A. The policy is to authorize enlistment for active duty at any time up to the day of induction.

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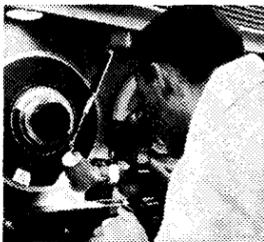
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Campus Interviews

Wed., February 18

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Photo by Dash

ALAN BEAGLE about to pin opponent in victory last season

Close Match

Matmen Bow to Biola, 25-19

The Caltech varsity wrestling team lost a close match to Biola in the first league action of the season in the Beaver gym Saturday. The score was 25 to 19, in favor of Biola.

Alan Beagle and Bruce Johnson won their matches by falls to account for ten of Caltech's points. Beagle took four minutes to pin his opponent in the 190 pound weight

class. Johnson pinned his heavy-weight adversary in just 1:20.

Other victors for Caltech were Randy Lewis at 142, Gary Zieve at 150, and Gary Wood at 158. Lewis won by an 8 - 0 decision, Zieve had a 5 - 1 victory, and Wood won by a 7 - 4 tally.

Caltech hosts Pasadena College and UC Riverside this Saturday in a tri-meet beginning at 1:00 p.m.

This competition also saw the Caltech epee team scoring a victory over the LAVC squad, winning 8 of 9 bouts. Richard Piccard and David Brin were undefeated, and Richard Pelletier won two of his three bouts. With transfer students Bordman and Rhodes soon to be eligible for competition, the epee team hopes to gain the depth that will be needed for the rest of the season.

Flems Nip Ruds In Football

by Richard L. Short

The house of Fleming emerged victorious over the house of Ruddock by the narrow margin of 8 - 7 in a Discobolus football

CHM Hoops Top Techers

The Caltech basketball team was defeated by Claremont-Harvey Mudd in a close game Friday at Claremont, the final score being 77 to 61, in the squad's first league game.

CHM outscored the Tech hoopsters by just one point in the second half, 36 to 35, but the Beavers could not make up the 15 point deficit they had accumulated in the first half. A contributing factor to Caltech's relatively poor showing in the first half (when CHM outscored Tech 41 to 26) was the Beavers' hitting on only four out of 12 free shots.

Ken Hanson led all scorers with 23 points for the orange and blue. Tom Heinz added 17 counters for the Beavers.

The Caltech varsity, with a season record of two wins and five losses, meets Cal Baptist there this Saturday at 8:20 p.m.

The JV hoop squad bowed to the tough CHM Stags by a score of 86 to 41. The half time score was 49 - 18, in favor of the Stags.

Gary Prohaska led the scoring for Tech with 13 tallies. He was helped out by George Meadows with nine points and Steve Kraus with eight.

The Jayvees also have a record of 2 - 5 for the season and 0 - 1 in league play. Their next game will be Wednesday here against Occidental, since their game with the L.A.P.D. Revolver Club was canceled.

challenge played on a wet Super-bowl Sunday.

Rain fell through most of the first half of the game, but it did not curb the enthusiasm of the two houses.

The Flems opened the scoring in the second quarter when quarterback Joe Templeton fired a touchdown pass to end Richard Burton. Fleming had a 6 - 0 lead at the end of the first half, since they missed the extra point attempt.

In the third quarter the Fleming House defense caught Ruddock's quarterback Keith Harris just inside the end zone for a two-point safety. This proved to be the big difference in the game.

Ruddock scored a TD in the final quarter on a long pass from Harris to Bill Butterworth. Stu Sando went over for the extra point to make the score eight to seven.



Swimmers Edge UCSD, 65-46

by Richard Short

The Caltech varsity swimming team took only eight swimmers and one diver to the meet at the University of California at San Diego Friday because UCSD had called and intimated that they would have a small squad and no divers for the meet. As a result, says coach Walter REck, the teams went down overconfident.

What should have been an easy win for Tech over a team that has only competed in swimming for two years, thus became a very close match. The Beavers emerged the victors by a score of 65 to 46. Caltech's final eight points were awarded by the judge to Caltech because San Diego had no 3 meter diving board.

Scoring Systematic

The scoring for swimming involves the awarding of seven points to the winning team in a relay, while in individual events 5, 3 and 1 point are given for first, second and third places, respectively.

The Tech 400 meter relay team of Maybry Tyson, Bob Hall, Jim Jakway, and Jeff Rude edged the UCSD quartet with a time 4:08.9 as compared to San Diego's 4:13.5.

Steve Sheffield won the 1000 yard freestyle race with a time of 12:15.9. Another Techer, Tom Coates, finished third.

Freestyle Win

In the 200 yard freestyle event, Tim Hight of CIT took first place with a time of 2:02.2, beating the SD man by just 3.2 seconds.

Lou Fielder finished third for the Beavers in the 50 yard freestyle, ahead of teammate Larry Andrews.

In the 200 yard individual medley, Tyson and Hall placed second and third, respectively, and

Caltech led 23 - 20 at that point. Larry Andrews, the only Tech diver, placed second in the one meter dive, getting 112.2 points while the winner had 129.75 points.

Tech's Ghoti

Caltech's Hight won the 100 yard freestyle race in 53.8 seconds, just one second ahead of the second-place finisher. Jeff Rude finished fourth in 57.55 seconds.

In the 200 yard backstroke event Fielder finished third behind two San Diego swimmers. Fielder was just 8.2 seconds behind the winning time of 2:34.0.

Sheffield won the 500 yard freestyle with a time of 5:52.4, giving Caltech a 45 - 42 lead with two events left.

Tyson and Hall then placed first and fourth, respectively, to make the score 50 - 46, CIT. Tyson's time was 2:34.2.

Last, But Not Least

In the last event, the 400 yard freestyle relay, the Beaver foursome of Jackway, Rude, Coates, and

Continued on Page Eleven

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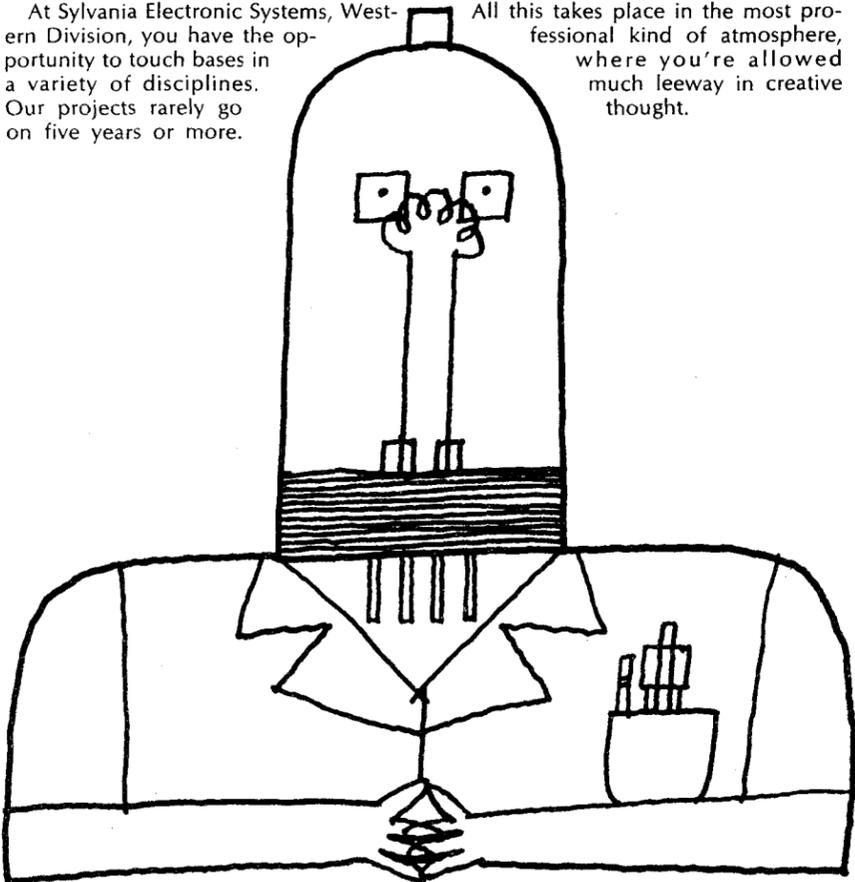
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Young Presidents Planning Program On Their Companies

The Faculty Committee for Relations with Industry will sponsor a program by the Young President's Organization at 7:30 PM on January 20 in Winnett Clubroom 1. The YPO is an educational organization with a membership of several thousand successful executives who have become presidents of sizable companies (the typical company has 200 employees and grosses \$5 million annually) before the age of 40.

After a short presentation concerning the backgrounds of the panel members, the meeting will be opened for questions and general discussion. Topics will include the opportunities in industry for recent graduates, company involvement in social problems, and the development of successful enterprises, but the range of subjects is by no means limited. The program will be moderated by Ben Earl (a Caltech grad) of the O.K. Earl Corporation of Pasadena. The panel will include Allen Davis of the Hydra-Electric Company, Howard Gilmore, Jr. of the Gilmore Envelope Corporation, Gerald McCann of McCann's Engineering & Mfg. Co., and Richard Van Vorst of the Modern Plastic Company.

Wright & Logan Draft Answers

at any time from any determination of an appeal board if he deems it to be in the national interest or necessary to avoid an injustice. If the appeal board has refused the registrant's claim by unanimous vote, consideration should be given to the state or national director, or both, an request them to take a Presidential appeal.

If You Lose

If the appeal board has ruled against the registrant by other than unanimous vote (which rarely happens), the registrant, any person claiming to be a dependent, or anyone who prior to the classification appealed from filed a written request for the current occupational deferment of the registrant can also within 30 days after the mailing of the notice of classification of the appeal board, appeal to the President. Additionally, the local board may allow any such person to make such an appeal even if the 30 day period has expired of the board is satisfied that the failure to file such an appeal within the 30 days was due to lack of understanding of the right to appeal or some other cause beyond the control of such person. In any case, the appeal taken in such a case (i.e. when the ruling was by less than a unanimous vote of the appeal board) is done by filing a written notice with the local board, just as with the other appeal.

Bubble, Bubble, Bubble, Bubble, Blub

Continued from Page Ten

Hight nipped UCSD by less than three seconds. Tech had a time of 3:39.3 while San Diego had a time of 3:42.2. The score was then 57 - 46 in favor of Caltech, before the judge awarded Tech the eight points for the forfeit in the 3 meter dive to make the final score read 65 to 46, Tech.

The swimming team is very much in need of more members, especially in the freestyle and backstroke categories. Coach Reck stated that 16 to 20 swimmers are needed to have an effective squad. Last year's

team, that placed third in the league, was much bigger than this year's squad. Many outstanding swimmers graduated and many frosh and upperclassmen decided not to go out for swimming this year to contribute to the lack of manpower.

Future Victories

This Friday the Tech swimmers play host to San Fernando Valley State and Cal State Los Angeles in a double-dual meet at 4:00 p.m.

Saturday the squad goes to Pomona for the SCIAC league relays, which Caltech won last year.



Steve Sheffield, Mabry Tyson, Maarten Kalisvaart, and Greg Wright copped honors last year in NAIA competition

STAFF MEMBERS URGENTLY WANTED!!!



THE CALIFORNIA TECH staff needs YOU! Putting out the TECH gets to be a lot of work - too much for just one Editor-Reporter-TYPIST-Playout Troll-Paste-Up Troll.

TYPISTS are needed Monday and Tuesday evenings for about two or three hours each evening. Two typists are needed each night, so the more, the merrier. If you can type, please help. My fingers are getting very sore.

REPORTERS to cover all of the news breaking around the Institute are in great demand and short supply. After getting this exclusive story out of Dr. Bonner, I still had to

write the rest of the paper. HELP!!! If you are interested in ASCIT, the YMCA, the Research Center, Electric Car Race, or any other regular or random activity at Tech, write about it. You will find that our Editors are perfectly willing to accept any and all such copy.

Speaking of EDITORS, the opportunities for advancement on the TECH staff are amazingly rapid.

→ Records, movies, and plays need reviewing, which translates to FREE TICKETS AND RECORDS for dedicated staffers. Also, you can enroll in En15, which carries three

units of "A" guaranteed to those who write an article a week!

Last, but far from least, we need PASTE-UP TROLLS. These funny creatures turn out the beautifully-proportioned TECHS which you all love to read. Drafting experience is desired, but not necessary.

Come and help me! If you are interested, see Paul Levin (20 Dabney), Phil Neches (3 Fleming), or Ed Schroeder (Off-campus), who can usually be found helping me in the TECH office in Winnett Center.