



Caltech's
Gain

California Tech

Associated Students of the California Institute of Technology

is the
Governments
Loss

Volume LXX

Pasadena, California, Thursday, December 12, 1968

Number 11



Grad Students plan commando attack on unidentified house. Project has been given code name, "Indescribably Delicious."

DuBridge Discusses Years at Tech, Work for Nixon

Retiring President Lee A. DuBridge spoke Tuesday of his career and future plans in a premature farewell address to some 1000 members of the Caltech community.

President DuBridge was introduced by Dr. Norman Davidson, chairman of the Faculty Board, who told about the changes that have taken place at the Institute since DuBridge first came here in 1946. Then there were only 525 undergraduates, 400 graduate students, and 125 faculty members. Today, 720 undergrads, 760 grads, and 520 faculty members work at Caltech. In 1946 when Lee A. DuBridge first came here the annual budget was a meager 5 million. Presently the budget exceeds 30 million.

Given a resounding hand of applause as he stepped up on stage, the President opened with the remark, "Glad to have your expression of pleasure on my leaving Caltech." For the next half-hour DuBridge talked about his new appointment to the Nixon administration as the presidential science advisor, about his years here at Caltech, and about the choosing of a new president. He also announced that Provost Robert F. Bacher will be acting President of the Institute until the new President, as yet unchosen, assumes office. DuBridge plans to leave Caltech around January 15 of next year.

DuBridge served during the Eisenhower years as chairman of the science advisory committee. He told of how last month, only

several days after the election had been clinched, Nixon offered him a post in his administration. Concerning his acceptance, DuBridge said, "I feel like an old warhorse getting back into harness."

DuBridge said that he would have three main functions as the President's aid. His first job will be to advise Nixon on matters of policy involving science. Next he will direct the coordination and adoption of federal research programs. Finally DuBridge said he would attempt to "congeal and coalesce the best thinking of the country" to bear on the nation's problems.

In discussing his successor DuBridge told of how the search has been carried out very diligently and carefully. He remarked that of all the candidates being considered, each would make a distinguished President.

Who the next President will be will not be known for several weeks. Robert F. Bacher, chosen as acting President, has been Provost since 1962 and a member of the faculty for twenty years. He played a key part in the carrying out of the synchrotron project. According to DuBridge, "He knows every nook and corner of the Institute."

In closing DuBridge thanked everybody and predicted that Caltech was going to reach far greater and higher heights than it had already attained. As the outgoing President left the stage, he received a standing ovation from the entire audience.

Grads Cry Uncle!

Draft Cuts Graduate Enrollment

John P. Healy

Ah, the glorious opportunity to serve your country! Sure? So, you're sweating the draft? First and second year male graduate students are indeed feeling the elimination of student deferments.

H. F. Bohnenblust, dean of graduate studies, comments that the depletion rate of the graduate school has been slower than expected. He cites as reasons for this the time element in processing, the fact that first year

grads had II-S deferments until September and have since appealed I-A reclassifications (thereby delaying their induction), and the recent lower draft calls. Bohnenblust believes that there has not been a significant nation-wide decrease in graduate school enrollment.

He states, however, that Caltech may have a greater percent drop in its graduate body than have liberal arts colleges due to technically trained students getting occupationally de-

ferred jobs. He explains that 790 grads registered in the fall of 1967; this was 50 less than expected. These 50 were not inducted, but decided to do something other than graduate work. Actually enrollment at the beginning of the school year was 762.

Where has II-S gone?

Third and fourth year grads are still entitled to a II-S under the new draft laws; therefore, the first and second year students are doing all of the appealing to local draft boards. Even TA's no longer receive a II-A occupational deferment.

The only chance for deferment for first and second year grads is to convince local boards that, 1) their research work contributes to the research effort of Caltech, and thus they should be considered employees, 2) the employees work is important to the national effort, and 3) the employee is uniquely significant to the employer. Caltech's faculty and administrators have been most helpful in such appeals by sending letters to local boards. Bohnenblust emphasizes that this approach is not guaranteed, but is the only position which the Institute can take. Since the term began, this procedure has changed 15 I-A's to II-A following "requests for reconsideration." II-A deferments are becoming increasingly difficult to obtain, Bohnenblust adds.

Keep that morale

Harold Lurie, associate dean of grad studies, says that the Institute's active involvement in appeals is a major policy change since last July. The process has had a positive effect on student morale. Lurie also emphasizes that deferments are not being sought on the basis of student

(Continued on page 3)

ARPers Hold Convention, Clear The Air On Smog

by Con E. Staisey

For several months the ASCIT Research Project has felt that poor communications between the anti-smog groups in California have led to duplication of effort and decreased effectiveness. This fall SRA Nino Cooley, Chairman of the project's Public Education group, attacked this problem. The result of her work was a day-long "Smog Conference" which convened at the Institute last Saturday. About fifty people, from Ruddock House to Palo Alto, gathered together to devise means of improving inter-group communications and to discuss programs on which the ARP and other organizations could coordinate. The conference group included representatives of the Clean Air Council, Stamp out Smog, GASP, Clean Air Now, and the California Air Resources Board, as well as interested professors and citizens.

Brief Speeches

The morning session of the Smog Conference was composed of a series of brief speeches. Nino spoke on the goals of the conference and former Executive Board Chairman Mike ,Garet described the ARP's summer activities. Duncan Agnew, and the current board chairman, Dave Perasso, placed several program proposals before the group. These proposals included initiating a system of annual auto inspection in smog counties, revising the statutes pertaining to used car devices, substituting liquified natural gas for gasoline in government and fleet cars, banning lead in gasoline, and strengthening laws relating to the licensing of mechanics and the compliance certification of devices.

Since most of the proposals introduced in the morning could

be converted into legislative proposals, Con. E. Staisey opened the afternoon session with a brief talk, "Where we Stand with the Legislature." Immediately afterward, the group split for "cafeteria" discussions. Cafeterias, now an ARP institution, are a technique in which each proposed topic is assigned a room, and people go to the rooms of their choice, shifting every twenty minutes. As used at the conference, the cafeteria allowed each participant to attend three discussions. ARPers assigned to each room collected the ideas brought forth in discussion.

More Groups

Highlighting the afternoon session were the appearances of Garsten Vieg of the Assembly Office of Research and Dr. A. J. Haagen-Smit, Chairman of the Air Resources Board. Dr. Haagen-Smit cautioned conference attenders against unifying. In legislative and agency hearings, the more anti-smog groups present and testifying, the better

(Continued on page 3)

Notices

RAGNAROK IS COMING!!

I absolve myself from all connection with this week's ears.

D. Lewin

CELEBRATE HANUKKAH

With candle lighting Sunday at 6:00 p.m. in Room 48, Blacker House. Take a short break from snaking. Everyone is welcome. For information call Roger Goodman at ext. 2170 or 449-9910.

YAF MEMBERSHIPS OPEN

The Caltech Chapter of the Americans for Freedom has recently received an ASCIT Charter and will soon have its national charter. Membership is open to all Caltech students and faculty. Interested persons may obtain applications in

the YAF mailbox in Winnett Student Center or from Jeffrey Ochser in 225 Ruddock.

BEEHOVEN'S BIRTHDAY

The Caltech Citizens for Beethoven Committee reminds you that next Monday, December 16, is Beethoven's Birthday, so think Moonlight Sonata, Fifth Symphony, Eroica, Hymn to Joy, etc. It's better than the Ride of the Valkyries.

FINALS ARE COMING!

Due to the imminence of those thrice-annual, unprintable, unmentionable objects, the Caltech Coffeehouse will close for the holidays following this Saturday, December 14. It will reopen January 5, the day before registration next term.

Editorial

Hello, Gen. H-Bar

As the article on grad students and the draft points out, the situation is in a total state of flux. The grads have as much security as they would being locked in a room with a game of Russian roulette going on. The faculty we have talked to about this situation are disturbed, but feel powerless. Some attempts are being made to procure occupational deferments for grad students, but these are not readily available, and are getting scarcer every minute.

So far, only five from Tech have been drafted, though stories of attrition in the ranks of last year's seniors, who were attending grad school elsewhere, abound. And the worst is yet to come, since the draft calls have been rising since October. A number of last year's grad students did not return this year, but instead found jobs in defense industries.

Last year, the California Y had regular programs on draft counseling, an activity which seems to have left us at the time Burt Housman did. They only group approximating a program of draft counseling is the Biology Division's D.E.A.D. (Draft Evasion Activities Disseminator), which has taken over some blank wall space on the second floor of Alles.

The end of the Vietnam War is some millimeters closer than at this time last year, but with its continuance, and the vagaries of a change in administration, there is no hope in sight for a near end to the drafting of grad students. The President's Commission on Scientific manpower was supposed to make a statement on the problem recently, but no one has heard anything from them yet.

Dave Lewin
Alan Stein

"Gates of Hell" Suffers Problems

by Con E. Staisey

On November 28 Cinematech presented Teinosuke Kinugasa's "Gate of Hell" and several shorter films in Culbertson Auditorium. "Gate of Hell" is one of the better "samurai" movies. Its story centers around the private war of Moritoh, a samurai, for Kesa, the beautiful wife of a palace guard. For the courage and loyalty he displays during a rebellion, Moritoh is granted one request by his ruler. Not knowing that Kesa is married, he asks for her hand. When the courtly company laugh at this request, his pride prevents him from withdrawing it. This pride, along with selfish desire, motivates virtually all of Moritoh's actions — his challenges to Watara, Kesa's husband, his forcing Kesa to meet with him and his threats to kill her husband and aunt if she refuses to elope with him. When Moritoh attempts to kill Watara, Kesa places herself in her husband's bed and is killed in his stead. The murder is an awakening to both men. Moritoh realizes that his love was never requited, that he has been selfish and forcing rather than selfless and giving. Watara,

too, feels that he has been blind to the anguish of his wife and so shares the responsibility for her death. In a dramatic denouement Moritoh crops his samurai pigtail and passes through the gate where the heads of decapitated rebels are hung, the gate of hell.

Not Original

Neither the plot nor the theme of the movie are overwhelmingly original but they are presented and executed well. "Gate of Hell" is well-directed and the colorful photography is entrancing. For English speaking viewers, however, the drama of the film may be marred by the stylized acting technique, alien inflected and trite subtitles. The jerky movements and crisp Japanese "k" sounds seem inappropriate to protestations of love and Moritoh's reaction to his crime is translated "Oh no, what have I done?". Though such impediments to ease enjoyment cannot be called flaws in the film itself, they do affect our responses to it.

Indeed, for dramatic impact, "Gate of Hell" was eclipsed by the shorter film, "An Occurrence at Owl Creek Bridge," which sensitively recalls the last impressions of a man about to be hanged. Again, beautiful filming is one of the highlights of the movie. We are, at first, led to believe that the man has escaped his fate. A frantic flight through river and wood, songs of rejoicing and detailed perceptions of flowers and birds could all be the actions of a man who has narrowly escaped death. They are not. They are the vivid, wish-fulfilling hallucinations of a man about to die. The final ironic twist which re-

veals the fantasy of the flight is characteristic of Ambrose Bierce, the story's author, and characteristically effective.

Shorts Steal Show

Two humorous shorts rounded out the evening. "The Fireman" is a typical Chaplin flick (i.e. good) in which the hapless hero wins all, primarily a fair damsel, in his befuddled battle against the forces of fraud and deceit. The "B & S Opticaudials" set a new record, for these mock advertisements stole, rather than interrupted, the show. At least 99 44/100% of the audience seemed to enjoy the crude farce of "Icky Goop," a hair cream that looks suspiciously like grape jam and is equally suitable for head, chest, and esophagus.

And in case you haven't heard, thirty pound cigarettes "may cause hernias."

Letters

Murphy Corrects Election Results

Dear Sirs,

I would like to correct two errors in your election article. First, the percentage on the proposal to divert dues were 44.1% yes, 54.3% no, and 1.6% abstaining, not "almost 40%" yes as your story stated. This shows a difference between the yes and no votes of 10.2% instead of the over 20% implied by your story. Second, a comparison of the housevotes and the petitions will show that it is not true that almost all he yes votes came from petition signers. I realize that the errors were inadvertent, but the impact of the proposition, which captured a majority in three houses, should not be undermined by mistakes, no matter how innocent.

Very Truly Yours,
Ed Murphy

Contrast Key to Penario Concert

by Alan Lederman

Leonard Pennario, famed concert pianist, returned to Beckman Auditorium last Saturday night. The concert was marked by the inspiration and strength characteristic of Pennario.

Pennario said he chose the program in such a way "as to give the optimum contrast in color between selections, and expose the audience to as many different moods as possible." It was a difficult program to perform, challenging the versatility of the performer. But the greater the challenge, the greater the reward, and virtuoso Pennario made the evening extraordinarily rewarding.

Contrast

The first selection was Sonata in E flat Major (Allegro, Adagio,

Presto), composed by Franz Joseph Hayden. In the first movement, we have the statement of two contrasting themes. The second movement is a slow development of the themes, and the concluding movement is the fusion of the themes, presented in rapid, classical sonata form. As in much of Hayden's work, this piece was characterized by a clear, strongly melodic, rhythmic mode. Following was a Barcarolle, Opus 60, composed by Frederic Chopin. This piece was written by Chopin after a trip to Italy, and the only one of this type that he composed. This gentle melody, over a swaying accompaniment, gives the impressions of waves flowing, perhaps in the canals of Venice. It has been suggested

that the composition is Chopin's interpretation of a Venetian love affair. Each of two distinct notes is repeated throughout, representing two distinct persons. The modulation is given the meaning of the kiss and embrace. Each of these is superimposed on the wave-like flow of the cantilena, suggesting movement of a gondola. This piece was especially well received by the audience, undoubtedly because it has a modern orientation.

Russian Panorama

Sonata No. 6, Opus 82 (Allegro moderato, Allegretto, Tempo di valzer, Vivace) composed by Serge Prokofieff, is a sweeping panorama of Russia. Mosaic in form, it is quite unlike any of the other selections. The first movement was a pounding, rugged, jagged march meant to suggest impending war. Major and minor chords clashed symbolically, overshadowing the Russian folk melodies heard in the background. In the second movement, the folk melodies become more prominent, suggesting tranquility. The third, waltz-like movement, is nostalgic for Russia's aristocratic past, romantic and removed from the world conflicts of the twentieth century. The finale is a rondo, subordinating each separate theme to the total theme of a great modern Russia. Prokofieff's Sixth Sonata is definitely one of the greatest compositions of our time, requiring both the percussive quality of the piano as well as its flow. Pennario rose to the challenge, giving a rendition which displayed the full scope of the work.

Deep Emotions
Mephisto Waltz, Franz Liszt's

composition based on an episode from Lenau's "Faust," was performed next. Pennario received two curtain calls. On the first, Scarlatti's Sonata in E Major, a vitalic piece was given. Brahms' Intermezzo in A Major, a delicate composition concluded the performance.

Pennario's performance was the concluding Beckman Concert of 1968. The fall season has been an outstanding success, bringing diverse performers to the Caltech community. The selections have been in the highest taste, and for the first time ticket sales have exceeded ninety per cent of capacity. The winter 1969 season promises the same high level of cultural experiences for the Caltech community.

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Ducks Lose Two Meets As Sheffield Sets Record

The Caltech swimming team opened its season with 2 losses. They lost to Cal State Fullerton, 58-55 and to powerful UCSD, 78-35. Coach Reck said that the UCSD defeat was expected but that the loss to Fullerton was due to the absence of several swimmers because of the Putnam exam and the poor showing of the freestylers.

The Beavers started off with a medley relay victory over Fullerton but lost to UCSD. Sheffield, a freshman, then swam an 11:02.9 1000 yd. free and set a Fullerton pool record, lowered the Beaver record by 37 sec. and beat an All-American from UCSD. In the next 3 events, the Beavers could only manage fourth and fifth as follows: Kalisvaart and Hunt, 200 free, Mikowicz and Rude, 50 free and Wright and Tyson 200 IM. Sheffield then lost only to the UCSD swimmers in the 200 butterfly with Hall fifth. Kalisvaart and Hunt were fifth and sixth in the 100 free. Wright won the 200 backstroke while Tyson was fifth. Sheffield took another third in the 500 free again losing only to UCSD. Rude was fifth. Stefanko was second in the 200 breaststroke with Hunt

third. The Beavers then lost the final 400 free relay.

In the diving competition, Reedy took a second in 3m. diving and a fourth in 1m. diving. Johnson was third in both the 1 and 3m. diving.

Smoggers Hold Convention

(Continued from page 1)

their case against industry. Mr. Vieg encouraged those present to concentrate their efforts on programs rather than self-organization. In a late afternoon post mortem, he listened to several of the proposals enumerated by Dave, commented in their feasibility and on the complexities of any public policy matters, and asked the remaining enthusiasts to support the state's attempts to set stiff vehicle emission standards. (Before the standards set this past summer can go into effect, California must demonstrate technological and economic feasibility to the federal government. Hearings on this issue will be held in January.)

Inspection Proposed

The results of the conference? A newsletter relating each organization's activities will proba-

Hoopsters Gain Split

The Beaver basketball team downed Life, 74-72 on Saturday after losing a tough game to Cal Baptist, 87-61.

The Hoopsters had a cold first half against Cal Baptist and then pulled to within 5 points of them only to fall apart once again. Top

scorers were Koenig and Bicknell with 15 points apiece. Heinz topped all rebounders with 7. The game can be seen from the shooting percentages. The Beavers managed 62.5% from the free throw line and a pathetic 32% from the floor.

Caltech came back to down Life the next night on Fox's jumper with 5 seconds left. The Beavers were led in scoring by Ault with 21 and Carrie with 19 points. Ault carried the team in the first half shooting 7 for 8 while Carrie repeated this feat in the second half. Heinz led in rebounding with 12 plus he had 10 points. The Beavers greatly improved their floor shooting percentage shooting 47.8%.

port. ARP editors pulled several all-nighters in their rush to have the 375 page report ready for the conference. Then the printer and his staff caught the flu.

bly be added to the UCLA newsletter on smog research. After take the lead in converting Christmas vacation, ARP will their inspection proposal into a bill to set up a state supervised program. While action on the other proposals is still uncertain, most ARP members felt the conference benefitted them simply by solidifying their contact with both technical and political figures important in the field of pollution control. Their biggest disappointment was the absence of the summer ARP's Final Re-

Grad Greetings

(Continued from page 1)

status. He believes that a first year grad is "as important to us as a bachelor-of-science man is to a defense related industry." Caltech is certainly involved in "community need," being the largest employer in the Pasadena area.

Lurie believes that schools have yet to feel the effect of the draft. He cites that one out of 25 inductees were college graduates last September, 1967; one out of 7 in August, 1968; one out of 5, in September; and one out of 4 in October.

Snake, if possible

Francis S. Buffington, associate professor of materials science and member of the Graduate Study Committee, comments that a "majority (of the engineering students) seem a bit fatalistic about the situation." There is some hope, however, as they wait and see what will happen. Most assume they will not be drafted as a basis on which to maintain their academic concentration.

Buffington says that at the end of last year, a grad student had to make a choice between the draft, a job, and grad school continuation. Numerous questions were voiced about this in the first three months of 1968, but lower draft calls have reduced inquiries. He adds that a deferred admission, by which a veteran can again enroll without reapplying, is available.

Arden Albee, professor of geology and also a member of the Grad Study Committee, believes that nobody in geology is ready to cut out to Canada. He states, that a few students seem to have difficulty concentrating — some days they'll hit the books, and on other days feel in a "what-the-hell" mood. Some want to get the draft over with, but maintain a tenuous hope that the situation will change.

Draft bait

Albee says that ten students are "real draft bait." Even grad students with a master's degree from other colleges may be classified I-A. Things are picking up, he adds.

As of November 15, the draft status of first and second year grad students was approximately as follows. Chemistry: 28 — I-A, 4 — II-A, 4 — III-A, 2 — I-D, 2 — IV-F, 7 — II-S, 6 — I-Y; of the I-A's, 25 are appealing, one has a delayed induction, one was inducted December 3, and one has not appealed. Physics: besides 14 non-citizens, 11 are I-A, 3 — II-A, 1 — III-A, 1 — I-D, 1 — I-S, 4 — II-S, 3 — I-Y; of the I-A's, about three have appealed, while one appeal was denied. Math: (very rough) 4 are I-A, 1 — II-A, 1 — III-A, 1 — IV-F, 4 — II-S, 2 — I-Y, and one veteran and one non-citizen.

Good-bye, Johnny

Five students have been inducted since September, and more are expected to receive their induction notices in the next two terms. Bohnenblust thinks that a first year grad might be better off taking the draft now so that after his two year hitch he would be able to start a fresh year in September.

The draft situation is not surprising to any grad student. The possible break in educational continuity and the resultant indefiniteness of the future must be met by each student in his own way.

TECH Sports

Matmen Take Two Wins

The Beaver wrestling team began its season with a 23-17 win over Pasadena College and then lost a 29-11 decision to UCSD. Tuesday they came back to beat L.A.C.C., 23-15.

In the first match, Hornbuckle, 130, Cox, 160, and Johnson, heavyweight, won by pins. Beagle won a demonstration match at 191 by a pin also. Morris, 115, and Lewis, 145, won their matches by decision while Holmes, 152, tied his match.

Bloomfield, 137, Taylor, 167,

and Devinney, 177, lost their matches by pins.

Against UCSE, the Beavers won 2 matches by decision and 1 match by forfeit. Beagle won by a pin in a demonstration match. Morris and Lewis won their matches while Johnson won by a forfeit.

Three Beavers lost matches by decisions—Langill, 123, Cox and Devinney. Hornbuckle, Holmes and Taylor were pinned plus the Engineers forfeited the 145 lb. class.

Alan Beagle pinned his man at 191; while Joe Devinney nearly pinned his opponent on the takedown at 177, and went on to win by a decision. The rest of Tech's points were on LACC forfeitures, for which Hornbuckle, Holmes, and Taylor got five easy points apiece.

Mark Morris, Bob Langill, Randy Lewis, Dennis Cox, and Bruce Johnson lost by decisions, most of them close, the latter two being decided by a single point each.

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“It never crossed my mind that IBM wanted Mechanical Engineers.”

“IBM is so involved in the electronics field, I’d always assumed they weren’t particularly interested in M.E.’s,” says Andy Simon.

Andy got his M.E. degree in 1967. He’s now a packaging engineer in memory development at IBM.

Andy found out why IBM needs good mechanical engineers when he went to his campus interview. As electronic packaging gets smaller and packaging density increases, a lot of new problems arise. And the M.E. has to solve them.

As Andy says, “When I design the hardware package for a micro-electronic memory unit, I deal with heat transfer and other thermal

problems, vibration and shock analysis, and electromagnetic compatibility. The associated connector design work gets me into stress and creep analysis and Hertz contact stress and evaluation.”

Then comes production

That’s only part of Andy’s job. After his team designs, develops, and produces a prototype memory unit, he has to work closely with manufacturing engineers, advising them on machines and processes to mass-produce the unit.

“It’s tough but rewarding work,” says Andy, “because the problems change with each new assignment. So an M.E. gains a lot of experi-

ence fast. The kind of experience that’s bound to help him move up the ladder quickly.”

Visit your placement office

Sign up at your placement office for an interview with IBM. Or send a letter or resume to Harley Thronson, IBM, Dept. C, 3424 Wilshire Blvd., Los Angeles, California 90005.

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