

## Czechoslovakia's Impact on Eastern Europe:

### The Whistle Has Been Blown

"We waited for you for six years. We lived with you for 20 years. And we shall hate you for four generations."

This is the curse of the Czechoslovakian people on the Russians, according to Caltech lecturer Dennison Rusinow, an eyewitness to the Soviet take-over in Prague.

Rusinow, speaking on the "Impact of Czechoslovakia on Eastern Europe" as part of the Caltech Lecture Series on January 19, told his audience in Beckman Auditorium:

"We are assembled here tonight by coincidence to commemorate the anniversary of an event that moved the heart of the world.

"A year ago today in a hospital in Prague, a young man, a 20-year-old student named Jan Pollock, died three days after setting himself on fire in Wenceslaus Square to protest the Soviet occupation of his country.

"His death stirred that country, for the last time unanimously—government, Communist Party, and people, all together—into a final, monolithic cry of anguish before they realized that the dream was really over and that they must live with the harsh reality of the uncompromising power and the brutally intelligent determination of their occupiers."

Rusinow came to Caltech after living in Belgrade, Yugoslavia, as a member of the American Universities Field Staff. Under this program, in which Caltech and nine other universities participate, staff members live two years in the field as independent observers; then they return to the U.S. for a year of writing reports and lecturing at the member universities.

A PhD from Oxford University, Rusinow has been studying and living in Eastern Europe periodically since 1953.

Although he admits that his personal values may affect his observations, he does not apologize for any lack of complete objectivity. As he told the audience in Beckman:

"I had the privilege, and I use the word advisedly, of witnessing an exceedingly rare and moving event in human history—the sight of an entire nation standing up as one man, as we are told the Hebrews did in ancient Egypt, to cry out with one voice, 'Let my people go.'

"Whatever has happened since, that remains an historical truth; and I am sad when the values that cry articulated are analyzed out of existence in the name of scientific objectivity or political realism.

"It may be, and in fact it certainly is true, that if the Dubcek regime had behaved differently; if it had gone more slowly, had muzzled the press, had avoided projects to democratize the Communist Party and share political power with other semi-autonomous institutions, had not talked so much about humanizing socialism, the Russians would not have intervened.

"But then the Prague spring would not have been what it was and would not have been important. Then it really would have been just another attempt to patch up and preserve a fundamentally bankrupt economic system."

In explaining the reasons for the Russian invasion and the impact it had on other East Central European countries, Rusinow qualified his conclusions by saying he was speaking not as a Kremlinologist, but as an observer of the people in the countries. And he added, "What is important in history is not what happened but what people believe happened."

Rusinow said the invasion came as a shock to the people of Eastern Europe for two reasons. First of all, they were

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Los Angeles city councilman Tom Bradley

### Bradley on Local Issues

Los Angeles councilman Tom Bradley, who gained national recognition last spring in his strong bid to become the first black mayor of Los Angeles, appeared at Caltech on January 23, at the invitation of the Caltech YMCA, to field questions from faculty and students.

He dodged only one question—his own political future. When a student asked, "Do you have any plans to run against Yorty in the next election?" Bradley quipped, "Well, I don't know the next election Yorty is going to run in."

Noting the reporters present, he added, "You know I'm not about to make any formal declaration, but keep your eyes and ears open when you approach 1973."

Bradley told the noontime gathering that he believed Los Angeles would establish a new department of environmental control because "everybody is now in favor of better environment." But he added, "My concern is that we do more than talk about it . . . We have to put up or shut up."

Pointing to the \$3 million expansion of a city steam plant that the department of water and power is proposing, despite the objection of the L.A. Air Pollution Control District, and to the pollution of the Los Angeles River by wastes from the zoo, Bradley said the city must act in a way that is consistent with its own aims before it can stop others from contributing to environmental pollution.

Bradley called for stricter enforcement of present anti-pollution laws and the addition of new regulations, saying, "I believe it is possible to manage environment, not just live with it."

When he was asked what the city council proposed to do about population control, Bradley said that a plan for the future of Los Angeles was being prepared and that he felt it would be possible to control the density of the population through zoning ordinances.

He commented on the desegregation suit brought against the Pasadena school board, and said, "Evidence brought out

in court indicated a clear pattern on the part of the board to resist change, to fail to respond to a need that was developing, and even, in some cases, to add to that problem . . .

"It was long overdue for a northern or western city to be subject to the same law we impose on the South—or at least try to impose on the South."

Bradley said the problem of segregation in Los Angeles schools is bad enough to require action. "I think Los Angeles will be subject to the same kind of decision. There is already a suit pending that will bring that board of education under the same regulation as Pasadena."

Asked what he thought should be done with regard to the hostilities between the Black Panthers and the police, Bradley said this is a problem that involves the whole community because it could lead to a "conflagration such as we had in 1965."

In charging the police with failure to understand the situation, Bradley also said, "I don't have any doubt about the fact that the police, not just here, but in other places, have determined that they want to eliminate the Panthers. I'm not suggesting they want to kill them, but they want to eliminate them as a viable force. And some in law enforcement have said we want to do this because it will permit the responsible leadership to rise to the surface.

"Now I suggest to you that this is a dangerous kind of thing to happen . . . I think we are approaching a police state when we let anybody, whether it's the police or somebody else, determine whether or not we are going to exterminate a group because we happen to disagree with their beliefs and their programs or their practices. Because if we start with one group, where are we going to stop?"

He added, "I don't think the Panthers have any particular or significant following today." In any case, Bradley feels the

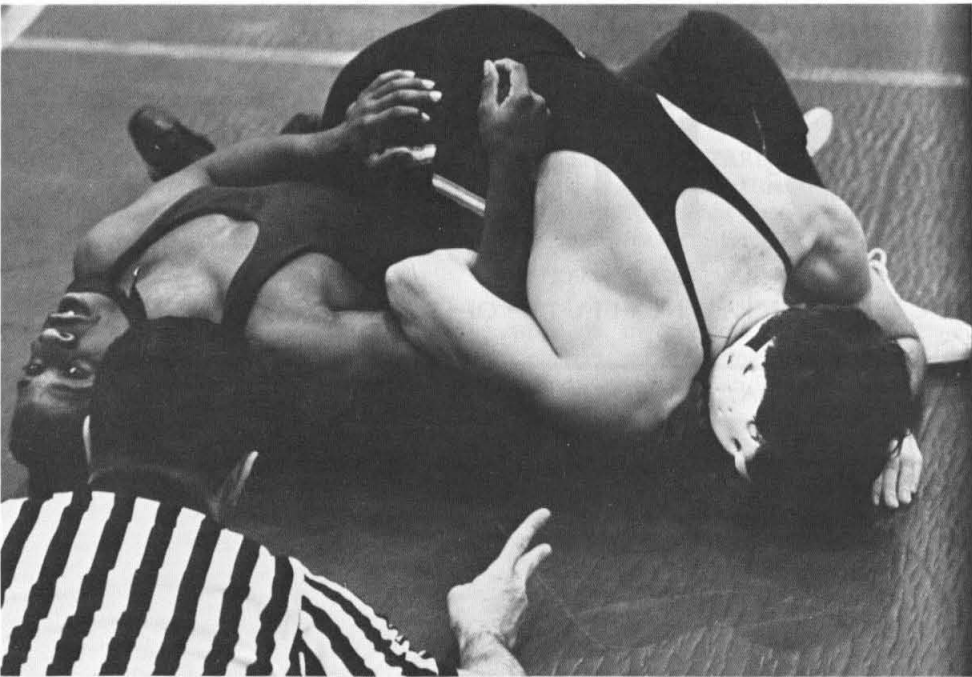
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#### DEDICATION

The George W. Downs Laboratory of Physics and the Charles C. Lauritsen Laboratory of High Energy Physics, in use since last spring, were formally dedicated on January 23. After a ceremony paying tribute to the two men for whom the buildings were named, there was an open house followed by a piano recital by Rosalyn Tureck Downs, widow of George Downs.





Caltech's Ken Bickford (right) pins Trade Tech man in "Turk" arm hold.

## SPRING SPORTS

### Caltech Wrestling for Conference Title

"We're off to our best spring sports season in the last seven years," says Warren Emery, Caltech's director of athletics. Seven years, as all diehard Beaver fans realize, is how long it has been between conference victories for Caltech's basketball squad.

A 15-foot jump shot in the last 55 seconds of overtime by Bruce Ault ended the seven-year drought, giving Caltech a 71-70 triumph over Redlands January 30. For his clutch play, Ault was voted College Division Player of the Week by the Southern California Basketball writers.

Others who helped Ault to break Caltech's 64-game conference losing jinx were Dennis Currie with 15 points, Ken Hanson (13), Jerome Feely (11), Gary Koenig (6), and Allan Wueste (10).

Coach Hudson Scott's team ended its one-game winning streak when they were blown off the court 78-59 in their next game with a strong Claremont-Mudd team, but the Caltech team still has a good chance to improve its record in the Southern California Intercollegiate Athletic Conference.

Although the basketball team may have earned the headlines, it is Caltech's wrestling squad that has the best chance to bring in the first conference championship in any sport in the last seven years.

Coach Tom Gutman's wrestlers, three of whom are undefeated, already have a tie for first in the Caltech Invitational

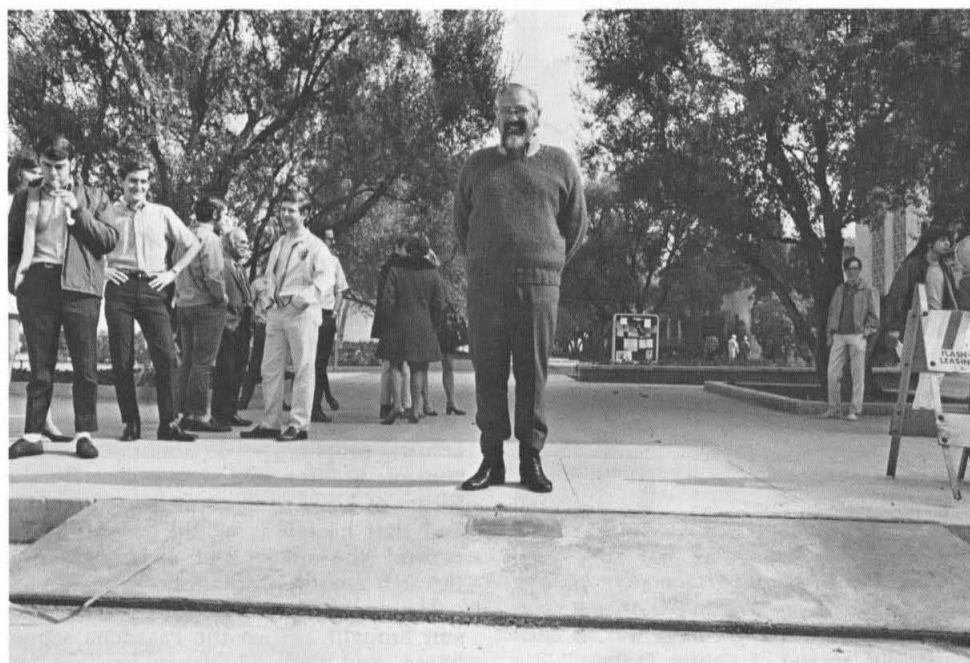
and have beaten defending champion Redlands in a dual meet.

Caltech is also doing well in fencing, the only sport in which it competes against major universities. Although coach Delbert Calvert's men lost an 8-1 decision to USC in a foil match, they have beaten Los Angeles Valley College 6-3 in foil and 8-4 in epee.

Swimming is one sport that does not seem to be on the upturn this season. Although they finished 10th in last year's national championships, Coach Lawlor Reck's swimmers may not be strong enough to enter this year's NAIA meet.

### "Funny People"

Caltech, always proud of its Nobel laureates, called for a special celebration when Max Delbruck and Murray Gell-Mann won both prizes in 1969. On the night of January 24, more than 250 faculty members and their wives honored Delbruck (prizewinner in physiology and medicine) and Gell-Mann (prizewinner in physics) at a dinner in the Athenaeum. After dinner the two laureates described their experiences in Stockholm, where they went for a week in December to receive their prizes. It remained for Max Delbruck to place the events of the last few months in perspective. "My thesis is . . . that there are no geniuses, that all of us, first we are funny young people, and after a while we are funny old people. And in between each of us is trying to make the best use of the exceedingly limited knowledge we have."



### RUSINOW, continued from page 1

convinced that it was the United States, with its interference in Vietnam and the Middle East, that was causing all the trouble in the world. In contrast, they believed the Soviet Union had undergone moderation since Stalin and was now a peaceful country.

"Yugoslavia itself seemed a case in point. It had been reaccepted in this period, even for interparty relationships between Yugoslav Communists and Eastern-block Communists, despite the continuing manifest independence of Yugoslavia and the manifest heresies of the Yugoslav kind of communism."

The second reason for the shock of the East Central European countries was their belief that Dubcek was playing by Russian rules. Czechoslovakia had avoided the mistakes of Hungary, it had remained loyal to the Warsaw Pact, and it had professed its faith in communism.

Because Dubcek and his friends played by the rules as they understood them, Rusinow said, "They simply could not believe that they could not do what they were doing."

Rusinow pointed to the importance of profound differences in view in those last months between Dubcek and the other leaders in Czechoslovakia, who were confident that they were in charge and pursuing a legitimate Marxist Communist course, and the rulers of the Soviet Union, who were increasingly convinced that Dubcek and his friends were losing control, whatever they had in mind originally.

Rusinow said this Soviet conviction and the Soviet overreaction in the face of this conviction tended to create a "self-fulfilling prophecy."

The leaders of the Soviet Union, convinced that Dubcek and company were losing control, began forcing them to back up. Resisting these pressures, Dubcek and company increasingly were thrown back on the sense of responsibility and moderation of their own people. And these people, though they remained sensible and extraordinarily moderate, nevertheless brought pressure to bear from the other end.

"What's important to emphasize," Rusinow continued, "is a convergence of factors, including some implied changed priorities or domestic crisis in the Soviet Union, rather than any one or two explanations with Czechoslovakia the victim."

According to Rusinow, the Eastern European countries drew these conclusions from the Russian invasion:

The invasion was neither (a) a momentary throwback caused by Dubcek's people not appreciating Moscow's lack of comprehension and confidence; nor was it (b) merely a defensive reflex limited in time and space; rather, it was a symptom of a larger scale, significant reversion in Soviet domestic and foreign policy priorities.

Rusinow concluded, "Now if this is true, it means that the ground rules have been changed, tightened, and that no meaningful further change is to be expected until the political crisis in the Soviet Union is resolved; and that might be a very long time."

"Most important of the new ground rules is the Bresnev doctrine declaring the right of the Soviet Union to intervene in the internal affairs of any socialist (communist) state in which socialism is endangered; the decision is to be made, presumably by the Soviet Union, when and how and under what circumstances socialism is endangered."

While most Western nations, including the U.S., tend to regard the Bresnev doctrine as an ex post facto justification of the invasion and of little consequence, Rusinow said the Eastern European countries take it far more seriously. Yugoslavia, genuinely worried about an invasion, passed an "All National Defense Act" and mobilized for a partisan war, threatening to make their country a "Russian Vietnam" if the Soviets invaded. Rumania also mobilized, Rusinow said, with the idea that the Russians might want to make a clean sweep.

Although the Czechoslovakia invasion is now considered a closed issue by the Eastern European countries, the dark cloud of neo-Stalinism remains. At the very least, Rusinow said, unless there is a major change in Moscow, the intervention in Czechoslovakia signifies a "blowing of the whistle," for some time, on European hopes of positive fallout from the East-West detente and the maturing Soviet society. While the older generation in Czechoslovakia maintains a type of passive resistance, the younger generation may not remain so patient in the future. According to Rusinow, the Czech students are saying, "We think about Hungary. We think we should be more like Yugoslavia. We think we should stand up and fight."

## Honors and Awards

### Physics

William A. Fowler, Caltech professor of physics, has won the American Physical Society's 1970 Tom W. Bonner Prize for nuclear research in astrophysics. The award, to be presented next October, recognizes Fowler's contributions to understanding the origin of the elements and the evolution of stars.

### Engineering

Amnon Yariv, professor of electrical engineering, has been elected a fellow in the Institute of Electrical and Electronics Engineers. Yariv, who has been a member of the Caltech faculty since 1964, is recognized for basic contributions to research and education in quantum electronics and solid state devices.

### Teaching

Caltech undergraduates want to make annual awards for good teaching. The purpose, as explained in a proposal to the Faculty Board from ASCIT treasurer Leonidas Guibas, would be to "express the students' appreciation of good teaching and, in doing so, to motivate and facilitate the improvement of teaching practices in general." The awards would probably consist of medals for faculty and medals plus monetary awards for graduate teaching assistants.

The proposal suggests that a maximum of five faculty and three teaching assistants should receive awards each year. Recipients will be suggested by a selection committee appointed by the undergraduate educational policies committee. Procedure for reaching the final choices includes formulating a list of criteria for good teaching, polling all undergraduates for nominations, winnowing and evaluating candidates, and presenting a slate for final approval by the educational policies committee and the ASCIT board.

### ALUMNI SEMINAR DAY MAY 16

Program To Be Announced  
Dinner In The Athenaeum  
Followed By  
Glee Club Home Concert

### DAVID R. SMITH MEMORIAL RAMP

Master of student houses David Smith seems resigned to the existence of an automobile ramp at the intersection of "Greasy Street" and the Olive Walk. Smith, who objected to the use of the Olive Walk as a parking lot and outdoor garage, had three previous ramps removed. The fourth ramp, built one night in January by students of Page House, will probably remain: Complete with engraved plaque, the David R. Smith Memorial Ramp is built of steel-reinforced concrete, and according to Smith, students have taken care that the abuses stop.





Robert Woodbury

## Academic Problem? Take the Educational Risk

Most of the public education system in the United States today is an antiquated outgrowth of 19th-century academism, according to a former Caltech historian who is now working with experimental education programs on the east coast. Robert Woodbury, an assistant dean of the school of education at the University of Massachusetts who also teaches history at Amherst College, told faculty and students during a visit to Caltech in January that what American schools need most are many varied ways of approaching educational problems and a greater willingness to take chances.

Admitting that he had been away from Caltech for nearly two years, and also recognizing the "obvious great things" at Caltech like the faculty's freedom in teaching and the small size that fosters a sense of community and a concern for the individual, Woodbury talked about two kinds of problems in the educational system at Caltech. First he characterized the undergraduate experience here as "anemic and one-sided." In a small, all-male, scientific institution where the general pattern is to adopt a single life-and-career-style, Woodbury said the student is subjected to compartmentalization of ideas and to a sense of isolation from society outside. He also criticized Caltech's lack of activity in the arts and non-sciences, which function as a valuable critique of the scientific community.

The second problem that Caltech must face, according to Woodbury, is its prestige. The Institute's reputation is so well established and its students and faculty so successful, that it is prone to stick with the status quo rather than risk innovations whose results are uncertain and sometimes ineffective.

Woodbury went on to suggest some guidelines for organizational change in higher education, including the following:

- Get a diverse group of people to do organizational planning. An ingrown place like Caltech needs input from people with many new backgrounds and attitudes.

- Set up competitive planning groups to elicit different kinds of ideas.

- Declare a moratorium on the use of such words as "expertise," "experience," "standards," and "be practical," whose meanings are usually internally determined and which inhibit creativity.

- Throw out the notion that credentials are important; often used for image-building, credentials can prevent constructive talent from becoming integrated in the academic community.

- Rule out academic critiques that aid in the entrenchment of outdated ideas.

- Set aside the question of money until planning is well under way. Respect for budgets usually hinders innovative thinking and, where there are interesting ideas, there is usually money available.

- Assume that small, incremental changes don't work. Instead of adjusting to the mean, which is a bad use of time, money, and ideas, escalate the problems. For example, instead of talking about changing the history, art, sociology, and biology departments, get rid of them and establish new departments, such as communications, human relations, aesthetics, and technology.

- Be willing to take chances on projects that seem inappropriate to present experience, such as Caltech running an elementary school in Pasadena. Similarly, be willing to bet on projects that are fun to do even if they don't seem "respectable or academic." Often the most important payoffs are from the programs whose results are unexpected and unpredictable.

- Assume that what students and faculty want to do is a good starting point for establishing a new curriculum. Also, encourage student participation in academic administration. Actually, where students are given a voice in administrative issues, they display the same kind of breakdown of political attitudes, from left to right, as do the faculty.

- Get away from the staples of academia such as the notions that a course must run a whole term, that the student ought to carry five courses, and that a classroom is defined by four walls.

- Force role-juggling: The security of an assigned position often discourages innovative thinking. Make people act and see themselves differently by giving them new responsibilities.

- Admit a significant body of the students on dramatically different criteria. The black student movement is the most potent force in education today because the students have surpassed the original issue of black student power for more far-reaching educational issues, i.e., the reorganization of liberal arts colleges and the reexamination of the significance of many traditional courses.

- Above all, accept the idea that there are many correct ways to analyze and solve the problems of education in American schools.

### BRADLEY, continued from page 1

Panthers should be allowed to operate freely. "I think the people will determine who their leaders will be."

Bradley, a former police lieutenant, criticized the Los Angeles police for the way they handled the raid on Black Panther headquarters last December, and said that leaders in the community should have been consulted before the raid.

"There was no alternate plan discussed or agreed upon . . . to bring the police into that section to arrest the Panthers in a way that would have avoided that violent confrontation."

He felt encouraged by the public reaction against the Panther raid and said, "I think we are now going to see a more rational approach to just how you deal with the Panthers, or any dissident group that has violated the law. If they violate the law, I think they ought to be arrested. There is no question about that. It is a question of how you go about bringing this type of activity under control."

## Scientists to Discuss Technological Change and the Human Condition

In his inaugural address last October, Caltech President Harold Brown said, "As part of our effort to find ways in which to help solve the problems of the nation and the world—particularly those for the creation of which science and technology must bear a substantial responsibility—we plan to hold during 1970 a series of four conferences, each in its way exemplifying an interaction between science and technology on the one hand and human behavior and society on the other."

The first of these four conferences will be on March 16-18 when Caltech hosts leading scientists from around the world in a conference entitled "Biological Bases of Human Behavior." Other conferences will be: "Technological Change and Population Growth," May 6-8; "Technological Change and Human Environment," October 21-23; and "Technological Change and Economic Development," December 2-4.

Robert Sinsheimer, chairman of the division of biology, who is organizing the first conference, says the scientists will review only that which can be said with confidence at this time about the evolutionary, genetic, and biochemical origins of individual behavior. One of the purposes of the conference is to generate an interest in biology and human behavior among professional people, particularly in the southern California area.

Among the areas discussed in the three-day conference will be evolutionary aspects—primate characteristics; chromosomal abnormalities in man, and genetic variability in man.

Other members of Sinsheimer's conference committee are Frederick Thompson, professor of applied science and philosophy; Seymour Benzer, professor of biology; Thayer Scudder, professor of anthropology; and Edward Lewis, professor of biology. In addition, 18 outside

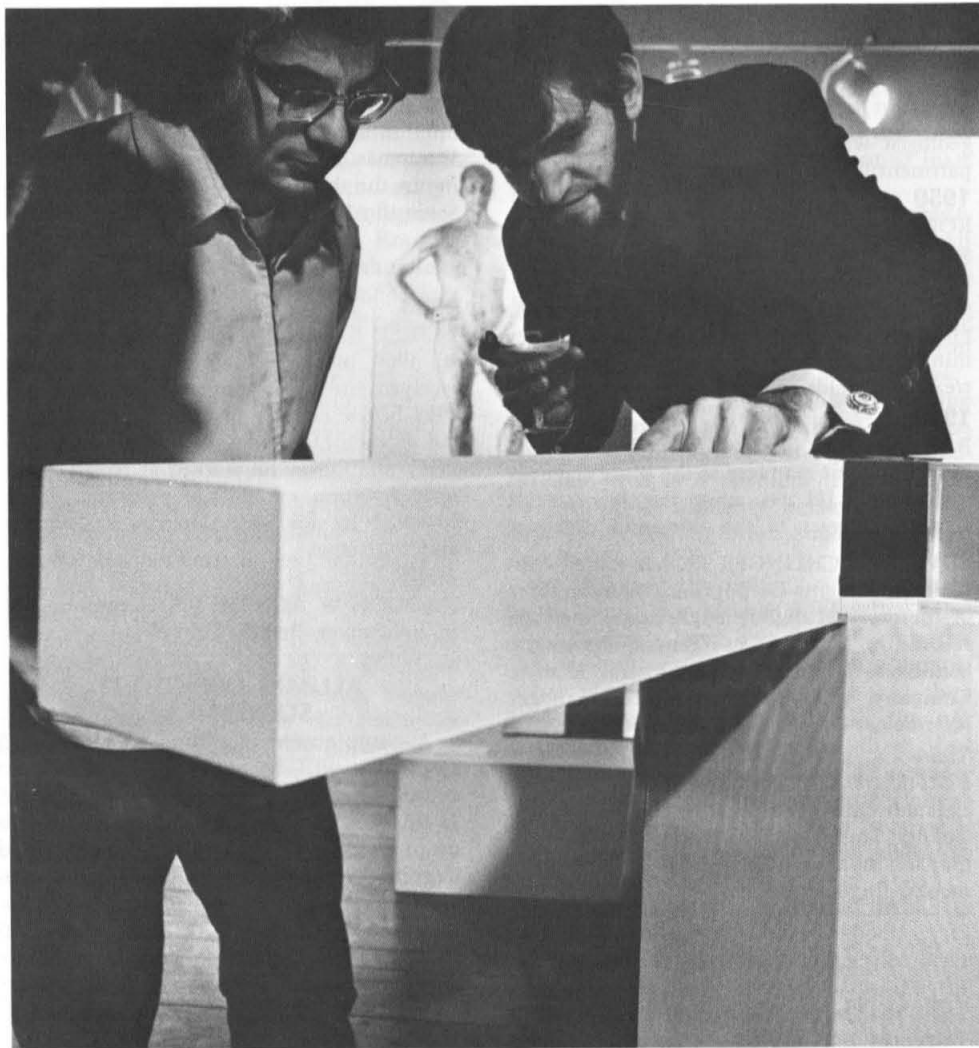
scientists will give papers. Carleton Gajdusek, of the National Institutes of Health, will give the featured evening lecture, "Physiological and Psychological Characteristics of Stone Age Man," on March 16 in Beckman Auditorium.

Tickets to the conference sessions can be obtained, at no charge, by writing to Professor Robert Sinsheimer, Chairman, Division of Biology, California Institute of Technology, Pasadena, Calif. 91109.

## An Earth Day Celebration

E-Day is coming. Also known as Environment Day or Earth Day, it is part of a movement that has sprung up as a force against destruction of the environment. Part of a National-Teach-In-On-The-Environment, organized by Senator Gaylord Nelson of Wisconsin, Representative Paul McCloskey of California, and by students at campuses across the country, E-Day is planned for April 22. At Caltech, the movement is being organized by students who have formed a nonpartisan political group they call the "Caltech Environmental Action Council," which will serve as a "resource organization for effective political and social action to upgrade the quality of the local environment." Headed by Jerry Yudelson and Paul Wegener, the students say they are concerned by the public's lack of technical information; beginning in the spring they will conduct educational and action programs, focusing on environmental problems.

The Caltech Environmental Action Council receives financial support from ASCIT, the Graduate Student Council, the Caltech YMCA, and the Alumni Association.



### ART EXHIBIT

The second art exhibit of the school year opened on the evening of January 27 in Dabney Lounge as the Institute Art Program presented the metal and plastic sculpture of Ferenc Csenter (above right) and the drawings and graphics of Paul Darrow. Csenter and Darrow are both currently artists-in-residence at Caltech: Csenter teaches sculpture, and Darrow, also head of the art department at Scripps College, teaches etching and lithography. The 375 people who attended the opening were entertained with music provided by Chris Darrow, former head of a folk-rock band and the son of Paul Darrow.



## PERSONALS

**1925**

ALBERT CHAPMAN, a consultant in plant engineering in Westland, Mich., and a member of the American Society of Mechanical Engineers National Nominating Committee, is now a fellow in the ASME.

**1932**

WILLIAM C. ROCKEFELLER, MS '34, formerly vice president of Sonico, Inc., of La Jolla, Calif., is now president of Via Computer, Inc., a company which he formed. The company, located in San Diego, engages in computer software development for scientific and management decision applications.

**1937**

FOSTER C. BENNETT, MS, head of the cast products section in inorganic chemicals technical service and development at The Dow Chemical Company, has been promoted to associate scientist by that company. With Dow since 1937, he was previously chief of the die casting section in the metallurgical research.

**1942**

ALBERT G. WILSON, MS, PhD '47, director of the Environmental Sciences Laboratories and associate director of the Douglas Advanced Research Laboratories, McDonnell-Douglas Corporation in Huntington Beach, is now on the faculty of the University of Southern California's Master of Liberal Arts degree program. He will teach "The Influence of Astronomy in Western Culture." Wilson is also affiliated with the research and educational institution known as Eomega Grove.

**1947**

ROBERT BEARSON has formed and is managing director of ABM, Advisors to Business Management, a consultant group located in Los Angeles.

JOHN R. SCULL, formerly manager of JPL's guidance and control division, is now the manager of the astronics division there. He joined JPL in 1949 as a research engineer.

**1949**

DON E. SIX has been appointed chief geologist of Texaco's producing department—eastern-hemisphere, located in Houston. Prior to the appointment he was a staff geologist with the executive producing department in New York.

**1950**

ROBERT R. GRINSTEAD, PhD, formerly a senior research scientist at The Dow Chemical Company's Walnut Creek (Calif.) research center, is now an associate scientist, promoted for his contributions to uranium mining operations and the water and waste treatment fields.

**1952**

RAYMOND L. HEACOCK, MS '53, previously assistant manager of the space sciences division at JPL, is now the laboratory's deputy manager of the astronics division.

EDWIN P. SCHLINGER JR. has joined Mobark Instruments Corporation, manufacturer of incremental digital magnetic cassette-tape recording systems, as general manager. Schlinger had been with General Electric Company, where he was project manager for nuclear power plant installations.

**1954**

FRANKLIN D. DRYDEN, MS '57, deputy assistant chief engineer with the Los Angeles County Sanitation Districts, is now a diplomat for the American Academy of Environmental Engineers.

**1955**

VINCENT M. CESTARI, MS '55, a security analyst for Eaton and Howard, Incorporated, of Boston, Mass., has been elected assistant vice president of research.

ALFRED M. GOLDMAN JR., MS '56, has joined the systems analysis section at JPL to work on the Mariner Mars '71 program. Goldman was employed by General Dynamics-Convair in San Diego.

**1961**

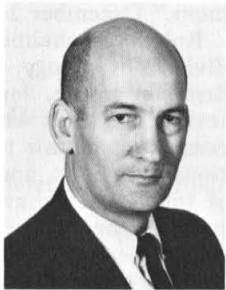
ELI I. CHERNOW became a member of the law firm of Tuttle and Taylor, Inc., on January 1, 1970. He is consultant and treasurer for the Caltech YMCA board of directors.

**1963**

JAMES M. SAGAWA writes that he is on a one-year assignment for IBM United Kingdom Ltd., as a software systems consultant for Rolls Royle aeroengine division in Derby, England.



Bennett, '37



Scull, '47

**1965**

S. MURRAY SHERMAN received his PhD in neuroanatomy this year from the University of Pennsylvania and is now working with the department of physiology at the John Curtin School of Medical Research in Canberra, Australia, on a two-year NIH postdoctoral fellowship.

**1966**

EDWARD T. MESCHKO, MS, now a T-38 Talon instructor pilot at Reese Air Force Base, Texas, was awarded the third-through-twelfth awards of the Air Medal and the U.S. Air Force Commendation Medal for action in Southeast Asia.

ERIC M. JONES, who recently received his PhD in astronomy from the University of Wisconsin, is now working as a staff member in the testing division of the Los Alamos Scientific Laboratory in New Mexico.

## OBITUARIES

**1933**

ALFRED B. C. ANDERSON, PhD, December 20, 1969, in Santa Monica, Calif. Anderson received his BS in physics from UCLA in 1928 before coming to Caltech. After teaching at the University of California at Berkeley and Davis, he worked at North American Aviation on missile programs. He is survived by his wife, Helene, a daughter, and four sons.

**1948**

HADDON W. AGNEW, MS, December 1967, in Vancouver, British Columbia.

## ALUMNI DIRECTORY SUPPLEMENT

A supplement to the 1969 Alumni Directory will be ready for distribution sometime after the fifteenth of January, 1970. This supplement will list the names and addresses of those who received degrees in June 1969. Copies of this supplement will be sent automatically to Association members who received degrees in 1969. Other Association members may secure a copy of this supplement by filling in the form below and sending it to the Alumni Office. Please send the 1970 Supplement of the 1969 Directory to:

Name .....  
Address .....  
City ..... State ..... Zip .....

## Coming Caltech Events

Friday, Feb. 20, 8:30 p.m. Beckman KINETIC ART SERIES. \$2.50.

Monday, Feb. 23, 8:30 p.m. Beckman BIOLOGICAL EXPLORATIONS IN EXTREME DESERTS: A PRELUDE TO MARS. A lecture by Roy E. Cameron, JPL. Caltech Lecture Series. Free.

Tuesday, Feb. 24, 8:00 p.m. Beckman TUESDAY NIGHT AT THE SILENT MOVIES. "The General" with Buster Keaton. \$7.00 series, \$2.50 single.

Friday, Feb. 27, 8:30 p.m. Beckman KINETIC ART SERIES. \$2.50.

Saturday, Feb. 28, 8:30 p.m. Beckman ROSALYN TURECK, pianist. "The Goldberg Variations" by Bach. \$5.50-\$4.50-\$3.50-\$2.50.

Sunday, Mar. 1, 8:15 p.m. Dabney YOUNG ARTISTS QUINTET in a program of music by Neufeld and Brahms. Free.

Monday, Mar. 2, 8:30 p.m. Beckman LUNAR ROCKS: THE SCIENTIFIC PAYOFF FROM APOLLO. A lecture by Donald S. Burnett, Caltech associate professor of nuclear geochemistry. Caltech Lecture Series. Free.

Friday, Mar. 6, 8:30 p.m. Beckman KINETIC ART SERIES. \$2.50.

Sunday, Mar. 8, 8:15 p.m. Dabney SONATA RECITAL. A program of music by Telemann, Veracini, Brahms, and Ravel. Performed by Louis Kaufman, violin, and Annette Kaufman, piano. Free.

Tuesday, Mar. 10, 8:00 p.m. Beckman TUESDAY NIGHT AT THE SILENT MOVIES: "The Hunchback of Notre Dame" with Lon Chaney. \$2.00.

Friday, Mar. 13, 8:30 p.m. Beckman KINETIC ART SERIES. \$2.50.

Saturday, Mar. 14, 8:30 p.m. Beckman REPERTORY DANCE THEATRE OF THE UNIVERSITY OF UTAH. \$5.00-\$4.00-\$3.00-\$2.00.

Monday, Mar. 16, 8:00 p.m. Beckman BIOLOGICAL BASES OF HUMAN BEHAVIOR. A lecture by Robert L. Sinsheimer, Caltech professor of biophysics and chairman of the division of biology. Free.

Friday, Mar. 20, 8:30 p.m. Beckman KINETIC ART SERIES. \$2.50.

Tuesday, Mar. 31, 8:00 p.m. Beckman TUESDAY NIGHT AT THE SILENT MOVIES. "Way Down East" with Lillian Gish and Richard Barthelmess. \$2.50.

## Shoemaker speaks in San Francisco

Eugene Shoemaker, chairman, Caltech's division of geological sciences, spoke to 250 people at the San Francisco chapter's alumni dinner on February 6. His topic, "Man on the Moon—the First Scientific Results," was illustrated with pictures of the moon taken by Aldrin and Armstrong last summer, and with pictures of moon rocks brought back on Apollo 11.

Also that evening, results of San Francisco chapter's elections were announced: The new president is Harrison Sigworth who was presiding over the meeting; the new secretary-treasurer is Spicer Conant. Curt Shulze continues as vice president.

## Alumni Calendar

March 6, 13 Athenaeum ANNUAL WINE TASTINGS I, II

April 25 BARN DANCE

May 16 ALUMNI SEMINAR DAY

June 10 Athenaeum ANNUAL ASSOCIATION DINNER

## Placement Assistance To Caltech Alumni

The Caltech Placement Service may be of assistance to you in one of the following ways:  
(1) Help you when you become unemployed or need to change employment.  
(2) Inform you of possible opportunities from time to time.

This service is provided to alumni by the Institute. A fee or charge is not involved. If you wish to avail yourself of this service, fill in and mail the following form:

To: Caltech Placement Service  
California Institute of Technology  
Pasadena, California 91109

Please send me: (Check one)

- ☐ An application for placement assistance  
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Name .....  
Degree(s) ..... Year(s) .....  
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Meetings: Engineers' Club, 16th floor, Hong Kong Bank Bldg., San Francisco. Informal luncheons every Thursday at 11:45 A.M. Contact Mr. Sigworth, 434-7700, Ext. 2918, on Thursday morning for reservations.

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Meetings: University Club, 1319 "K" St. Luncheon first Friday of each month at noon. Visiting alumni cordially invited—no reservation.

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