

# The Month at Caltech

## *New Provost*

Caltech will have a new vice president and provost next fall, and even though he has been a member of its faculty for 24 years, he looks forward to having six months to learn about the job before he has to start doing it. Robert F. Christy, professor of theoretical physics and chairman of the faculty, will hold the second highest administrative post at the Institute when he succeeds Robert F. Bacher, who retires after having served as provost since 1962.

As Caltech's chief academic officer, Christy will have over-all responsibility for faculty appointments and promotions, and for academic planning and research. He feels that the fact that he has been at Caltech for a long time, that he knows the faculty, and that they know and trust him will be very helpful.

Christy decided to accept the job of provost partly on the basis that he has changed the nature of his work occasionally in the past and has found doing something new very stimulating. "I'd rather try new things than get into a rut," he says.

In fact, Christy's career shows very little evidence of time spent in a rut. During World War II he worked at Los Alamos on the development of the atom bomb. In the immediate postwar years he concentrated on theoretical and nuclear physics, and for the last nine years he has been doing astrophysics, with the result that his calculations on variable stars won him the prestigious Eddington Medal of the Royal Society of London in 1967.

His research and teaching contributions are only part of his service to Caltech.



*Provost-to-be Robert Christy*

## The Month . . . *continued*

He has been on the faculty board, the academic policies and the academic freedom and tenure committees; he was also a member of the presidential selection and the aims and goals committees. He became executive officer for physics in 1968, and in 1969 was elected chairman of the faculty. He says he spent a good deal of time in that newest job interacting with faculty members, discussing their problems, and trying to see sensible approaches to helping them. It was an interesting experience, and it led him to believe that what a provost would have to deal with would be both challenging and rewarding.

The time Christy has spent on the chairman's job in the last six months has interfered considerably with his research, so he is prepared for the fact that being provost will interfere even more. What makes it worthwhile, however, is the opportunity to oversee the activities he feels are the very heart of the Institute—its academic program. (He stresses that he means "oversee," not supervise or control.)

Because the provost is supposed to be aware of and sensitive to faculty views, reactions, and problems, and because the provost has over-all responsibility for academic matters, Christy believes that in the long run the actions of the provost will have a major cumulative effect on the Institute. However, Caltech's small size and the accessibility of its administrative officers to anyone who wants to speak to them make all activities and problems somewhat interrelated.

"At this juncture in the Institute's history," Christy comments, "there are some very interesting changes in the works. In an administration where many positions are filled by persons who have held them for a long time, a newcomer to a job is constrained by traditional habits and attitudes. We have a new president and many other new people in important positions or being sought for them. We are likely to be bound much less than normally by the past. This is a situation that invites expression of new ideas and gives freedom for new ways of doing things."

## SALT

As one of the six members of the U.S. delegation participating in strategic arms limitations talks (SALT) with the Soviet Union, Caltech president Harold Brown attended the first session in November and December in Helsinki, Finland. Though limited in the amount he could disclose regarding these first meetings, he made some comments in a speech to the Los Angeles World Affairs Council on February 9 (and repeated his remarks to the Caltech community in Beckman Auditorium on February 18).

"In these discussions," he said, "we seek to slow down, to halt if possible, and perhaps eventually even to reverse the continual cycle of development and deployment of new strategic weapons systems which constitutes the strategic arms competition between the United States and the Soviet Union." Both countries now have the ability to strike back and destroy, despite any defenses, the civilization of the other. The security of each side thus rests on this assured destruction capability, which deters the other from launching a thermonuclear attack.

Brown pointed out that "this is a dismal sort of safety, resting as it does on the good sense of another government, but so long as nuclear arsenals exist it is the best we are likely to know." Continued developments and deployments are not likely to make either side any more secure, and it may well turn out that both will be less secure.

The talks at Helsinki were not for the purpose of negotiating agreements but to see if the foundations could be laid for subsequent substantive and detailed negotiations. Brown said that each side wanted to explore the thinking of the other and to probe its seriousness of purpose.

The Soviet motives in strategic arms talks are probably quite complex, but Brown felt that among them might be, first, a desire to damp down the arms race, improve the security of both sides, and save the money that would otherwise be spent on strategic forces. A second

possible Soviet motive might be to prevent U.S. moves in the strategic arms competition that they fear might tilt the balance in our direction. A third motive could well be political, perhaps to stabilize one of the many fronts on which the Soviets find themselves engaged or to place restraints upon the U.S.

Whatever their motives, Brown said it became clear to him that the Soviets were quite serious in these discussions. In the first place the Soviet delegation had individuals who were very knowledgeable about the Soviet weapons programs—a new phenomenon in such discussions. Second, there were no polemics and few if any examples of ideology overriding sound analysis. Though clear differences in view emerged, both sides kept the talks private, serious, and constructive in tone. The third evidence of the Soviet attitude was that their presentations showed that they had been thinking long and hard about strategic arms.

Brown felt that a program of work was agreed upon as a result of the discussions that will allow flexibility for subsequent negotiations that will begin in Vienna in April. He cautioned Americans not to expect too much, too fast, since in such matters as national security both sides can be expected to exert great care and caution. At the very least, it is his opinion that we can expect a continued productive dialogue about the weapons systems of both countries. Such a dialogue cannot help but provide information for both sides that may reduce the most extreme concerns that have led to over-reactions and increased rates of strategic arms buildup.

It is also possible that a specific agreement may be reached; this would require complex arrangements, patience, and give-and-take on both sides. Thus, even if the talks are successful, they may go on for a long time.

Brown concluded that no international enterprise is more important than damping the strategic arms competition. "The coming phases of SALT may determine whether each of our countries is given the chance to turn to the nonmilitary

problems which concern us all—the population explosion, environmental pollution, domestic tranquillity, the problem of the developing countries—or whether, instead, the risk of turning this planet into a thermonuclear inferno will become greater and greater, and perhaps overwhelm us all.”

### Computer Addition

Within a year a \$1.2-million addition to the Booth Computing Center will more than double the space for computer processing at Caltech.

The new facility is being built in response to rapid growth of Caltech's work in information science—the understanding of the complex relationship of science, technology, and social systems through new mathematical concepts and computers. Also, more than 1,200 Caltech faculty members and students now use the computing facilities, with physicists, biologists, chemists, and engineers being especially heavy users.

With the 30,000-square-foot addition, the computing center should give Caltech adequate space and facilities for at least five years. The addition will consist of laboratories for research in the information sciences and biosystems, an extra large laboratory for use in information processing in social systems, keypunching facilities for computer use, a keypunch service, space for card deck storage, customer cubicles, conference rooms, and offices.

### Lacey Lecturer

Rutherford Aris, professor of chemical engineering at the University of Minnesota, was the third recipient of Caltech's annual W. N. Lacey Lectureship in Chemical Engineering. Aris presented two lectures in February at Caltech, one on "Mathematics and the Elucidation of Chemical Concepts: The Notion of a Chemical Reaction Mechanism," and the other on "Mathematics and the Modeling

of Chemical Systems: The Transient Behavior of Chemical Reactors."

The Lacey lectures bring experts currently active in chemical engineering or related disciplines to the campus. They are made possible by a fund established at Caltech by friends and former students of Lacey, who became professor emeritus of chemical engineering in 1962. He came to Caltech in 1916, and served as dean of graduate studies and dean of the faculty in addition to his teaching and research. Lacey is widely recognized for his research on the behavior and properties of hydrocarbons.

Aris is known for his contributions to the mathematical analysis of chemical reaction systems and to the analysis, control, and optimization of chemical reactors. Among his awards are the E. Harris Harbison Award for Distinguished Teaching from the Danforth Foundation, and the Alpha Chi Sigma Award for Chemical Engineering Research from the American Institute of Chemical Engineers, both won last year.

### Digging In

*It was Arbor Day, so what could be more appropriate than for the new Caltech Environmental Action Council to plant a tree (two, in fact, near Millikan Library). The Council, a student organization with offices in an unused part of the Campbell Plant Research Laboratory, claims the participation of about 70 students, staff, and faculty in their activities. CEAC's purpose, stated in its monthly newsletter *ECOLOGY*, includes "catalyzing concern about ecological problems, cultivating ecological awareness, encouraging political and social action, and conducting educational programs."*

