



THE MONTH AT CALTECH

A TUBELESS SIPHON

Engineering graduate student David James shows how a polymer-and-water solution continues to pour even after he has righted its container. James came across "elastic water" during research on heat transfer in flow of polymer solutions. The liquid derives its properties from long polyethylene oxide molecules.

LANGUAGE EXPERIMENT

An experiment in language teaching, a program designed to give graduate students the ability to discuss their research in a foreign language, is now being conducted at Caltech. For years PhD candidates have been required to gain a *reading* proficiency in two foreign languages. Now Caltech faculty members feel it is important for scientists to be able to talk about their work in at least one foreign language. Accordingly, a two-year trial course in French is being offered to a dozen graduate students. The course, which has been developed by Paul Bowerman, associate professor of modern languages, and James W. Greenlee, instructor in French, combines language laboratory sessions and class work. Prerequisite: no previous knowledge of the language.

INTERNATIONAL DESK

An international desk to give assistance to the record number of foreign students (223) and research fellows (164) and their families now at Caltech has been set up at the Institute by a new fac-

ulty committee on foreign students and scholars. Vito Vanoni, professor of hydraulics, is chairman of the committee.

"Assistance," according to Ingrid Gumpel, foreign student advisor, who manages the service, "is nonacademic advice or aid and is liable to include finding an apartment, buying furniture, explaining immigration regulations, planning parties, arranging hospitality, or teaching women how to read supermarket ads. ("What, please, is this *fryer*, and *spare rib*?")

EARTHQUAKE RESEARCH

Future office buildings, dams, or bridges must be planned and built to resist the destructive forces of earthquakes. With this goal in mind, comprehensive research in earthquake engineering is now under way at Caltech, supported by a \$407,400 grant from the National Science Foundation for the first two years of a scheduled five-year program.

An Institute team led by George W. Housner, professor of civil engineering and applied mechanics, and Donald E. Hudson, professor of mechanical



HIGH SIGN

Nine stories up, on the east face of Caltech's Millikan Library-under-construction, three Alpine Club members posted a notice of their club meeting on November 29. In addition to practice in mountaineering methods, they got a large attendance at their meeting.

engineering and applied mechanics, will conduct studies of how the ground shakes during destructive earthquakes, how different kinds of soils affect such shaking, and how structures react to earthquake-induced stresses and strains.

The first project started under the grant involves Caltech's new nine-story Millikan Library, now under construction. Earthquake-like forces will be simulated in the building by vibration generators, and the results will be analyzed to predict structural safety. Special permanent seismographs in-

stalled on the library's ground floor and roof will also record the building's reactions to future earthquakes and allow comparison studies of predicted and real reactions.

EXECUTIVE OFFICER

Ernest E. Sechler, professor of aeronautics and a member of the faculty since 1930, is now serving as executive officer of Caltech's Graduate Aeronautical Laboratories. His appointment, following the death last January of Clark Millikan, makes him the second man to head the laboratories. A Caltech alumnus, Dr. Sechler earned his BS in 1928, MS in 1930, and PhD in 1934.

HONORS AND AWARDS

Cornelius J. Pings, professor of chemical engineering, has been named to the editorial advisory board of a new scientific journal, *Physics and Chemistry of Liquids*, which will begin publication in March 1967. Dr. Pings will serve with five U.S. and eleven foreign scientists on the board.

Caltech engineers George Housner, left, and Donald Hudson, right, record the shaking produced by vibration generators temporarily installed in the new Millikan Library. These tests are the first project in an expanded program for earthquake engineering.



Burt Housman, associate secretary of the campus YMCA, talks with a group of Caltech women graduate students at the first Y-sponsored coffee for the ladies last month. A record number of women are enrolled at the Institute.

James J. Morgan, associate professor of environmental health engineering, has been appointed editor of a new monthly journal of the American Chemical Society, *Environmental Science and Technology*, which will appear in January 1967.

WOMEN BY DEGREES

Female students at Caltech (once nonexistent, then for years a rarity) are now getting to be an impressive statistic. This semester 38 women graduate students are enrolled at the Institute—more than twice as many as there were five years ago and 12 times as many as a decade ago.

Woman who have earned degrees at Caltech have been still more scarce. Even when the name was Throop and the student body was coeduca-



tional, only two women succeeded in getting a BS—the first in 1896, the last in 1906. Forty-nine years passed before another women earned a Caltech degree. In 1955 Dorothy Semelow received a PhD in chemistry, and became a historic “first.” Since then only 22 other women have been granted PhD’s from Caltech. And of that number, seven were given this year.

ALUMNI SPEAKERS

Two former Caltech students whose careers have followed radically different paths came back to the campus last month to talk about those careers. Paul Saltman, '49, PhD '53, professor of biochemistry at USC, spoke to a Caltech YMCA Luncheon Forum on November 23 on “Science Is a \$9.95 Dress.” He confessed that he has found scientists can be as greedy and corruptible as anyone else—even though they don’t often admit it to themselves. The unfortunate result of their hassle for status and grab for grants is an educational environment that frequently destroys genuine scientific enthusiasm in students. Saltman himself was on his way to business school after four years at Caltech, but in the last ten weeks of his senior year was “intellectually seduced by Professor James Bonner . . . who rekindled old fires and aroused dormant passions concerning science as a way of life.”



52ND ANNUAL MUDEO

Caltech's freshman-sophomore wallow in the mire was won this year by the freshmen, who cheated more skillfully than the sophomores—who took their revenge on the judges, including the president of the junior class, Leonard Erickson (left).



BRIDGES ON AUTOMATION

Harry Bridges, president of the International Longshoremen's Union, talks to Caltech's National Security seminar on November 30, on the subject of automation.

In the case of the other visitor, George Starbuck, science did lose out. He left Caltech in his sophomore year (1949)—and became a poet. Now teaching in the University of Iowa's Program in Creative Writing, Starbuck spent an evening reading from his second book of poems, *White Paper*, to a responsive audience in Dabney Lounge on November 29. His relatively uncomplicated poetry, often dealing with current social or political issues and displaying considerable technical virtuosity, has appeared in such magazines as *The New Yorker* and *Atlantic*. His audience included several faculty members who had known him as a student; undoubtedly they were wondering if the world would have one less poet if Starbuck had stayed at Caltech for a full four years.

STUDENTS' DAY

More than 892 students and 171 teachers from 215 southern California high schools came to the Caltech campus on December 3 for the 17th annual Students' Day. The day-long program included tours of 61 research and engineering project exhibits; a noontime performance by the Caltech Glee Club in Beckman Auditorium; and afternoon lectures by Caltech's President DuBridge, Robert A. Huttenback, professor of history, and Leonard D. Jaffe, Surveyor Project scientist from JPL.

INTERHOUSE DANCE

To the noise of five, live "stomp bands" (electric guitars, drums, long hair, and overamplification systems) Caltech students and their dates enjoyed both the activity and the decor at the annual Interhouse Dance on November 19. Entertainment this year included such unlikely fare as medieval jousting and an oldtime Western movie run backward.

CONFERENCE ON TV

"A Conference on Scientific Progress and Human Values," a series of weekly television programs featuring the lectures given at Caltech's 75th Anniversary Conference in October, will begin on Sunday, January 8, (from 4 to 6:30 p.m.) over KCET, Channel 28, in Los Angeles. The six programs scheduled will present the speakers in the order in which they appeared at the Conference (*E&S*, October 1966). The series will be shown later in other parts of the country.

