

THE MONTH AT CALTECH

Caltech Movie

LAST MONTH THE INSTITUTE started work on a movie about Caltech, to be used for recruiting new students. The finished film should be between 20 and 30 minutes long, and is being shot in full color and with sound—to the extent that there will be a narration accompanying the action.

The picture is being produced by the American Releasing Corporation, a Hollywood commercial film firm—with occasional assists from Frank Capra, Hollywood producer and noted Caltech alumnus.

The film is intended to give high school students some idea about student life and work at Caltech, and to tell them something about its facilities and faculty.

Shooting is well under way on the film now, and should be largely completed within the next month. The film should be finished and ready to be shown early in the fall.

Visiting Lecturer

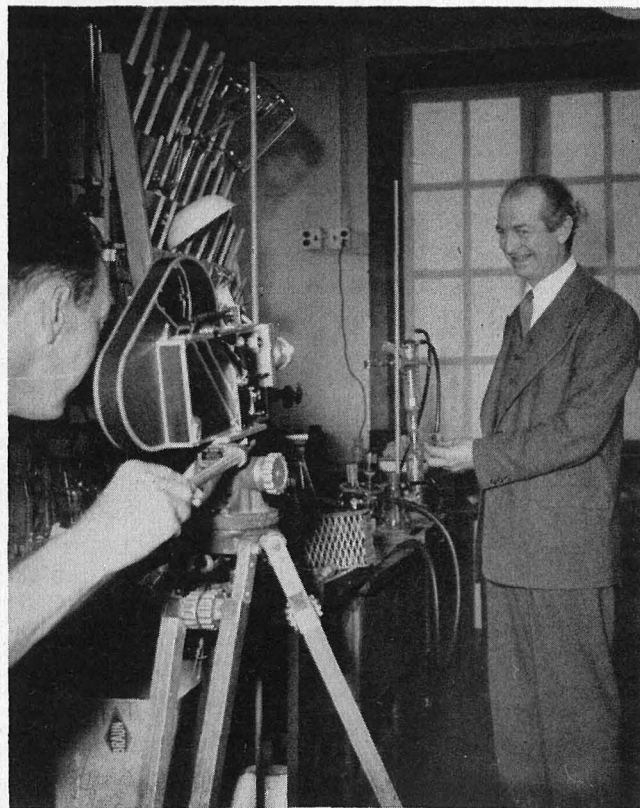
DR. ENRICO FERMI of the University of Chicago arrived at the Institute last month to deliver a series of special lectures in Physics on "Properties of Elementary Particles." Dr. Fermi's lecture series follows those of such other distinguished visiting physicists as Dr. I. I. Rabi, Executive Officer of the Department of Physics at Columbia University; Dr. J. Robert Oppenheimer of the Institute for Advanced Study at Princeton, N. J.; Dr. Robert Feynman (now a member of the Caltech faculty); and Dr. Hans A. Bethe, Director of the Laboratory of Nuclear Studies at Cornell University.

Dr. Fermi won the Nobel Prize in 1938, while he was at the University of Rome, for his discoveries of new radioactive substances which he found with the aid of neutrons.

Dr. Fermi later worked out the theory and design of the nuclear reactor, and helped supervise construction

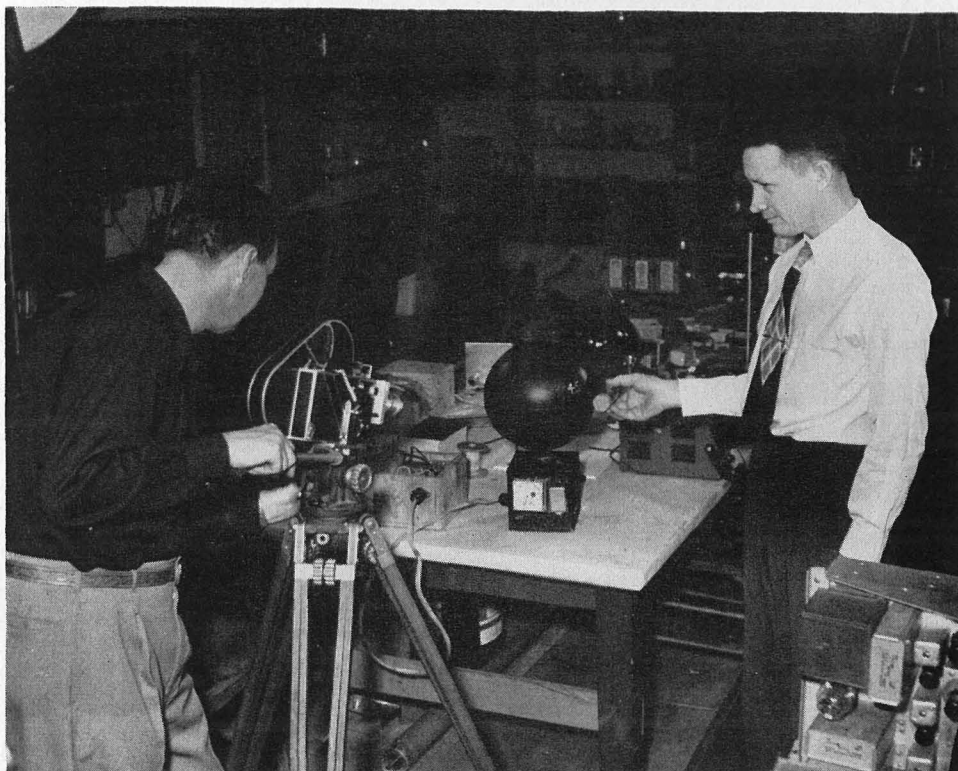


Movie men move in on Dean Eaton's English class . . .



. . . and move on to Dr. Linus Pauling in the laboratory

Victor Neher demonstrates some of his cosmic ray research equipment for a scene in the Caltech movie



of the atomic pile at the University of Chicago, where the first controlled chain reaction took place in 1942.

"I have not the slightest feeling of guilt," Dr. Fermi remarked at a press conference held at the Institute last month, "concerning any part I may have played in creating the atomic bomb. Scientists can't help but make discoveries. You can't stop discoveries. Besides, any single individual can offer only so much of a contribution to the discovery."

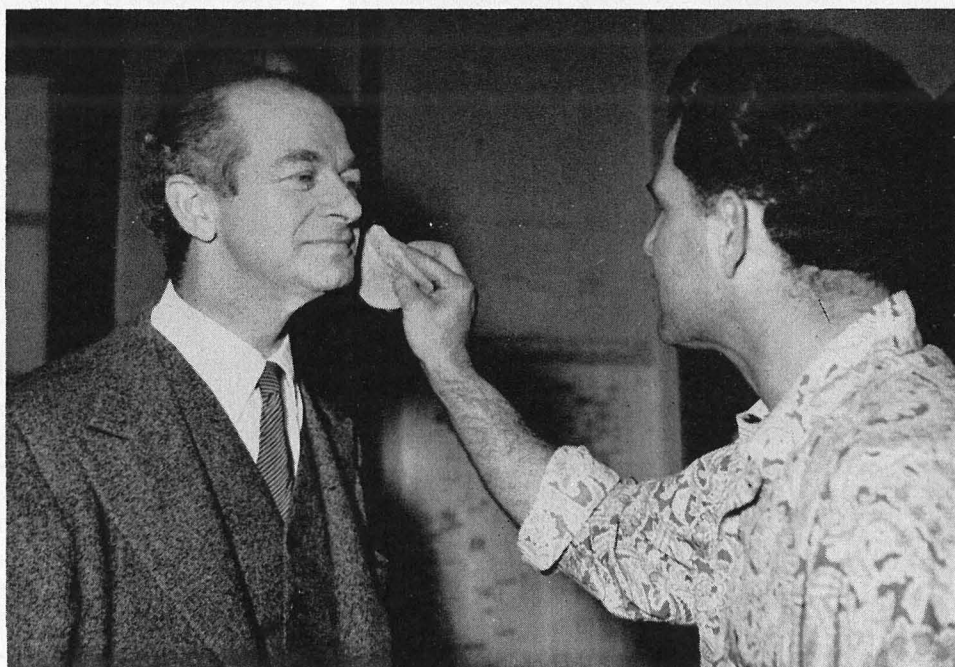
Questioned about cosmic rays, Dr. Fermi, who is responsible for several cosmic ray theories, remarked

that "although some cosmic ray energy definitely comes from the sun, it is probable that much of the radiation comes from the most distant stars, or even from remote space."

He maintains that the fastest cosmic particles must have been constantly accelerated for as long as 2,000,000,000 years to reach their present speeds.

"We can't control cosmic rays," he said, "or make better machines with them. But they constitute our sole hope of learning more about energies which are far

CONTINUED ON PAGE 26



Linus Pauling gets the Hollywood treatment — an application of face powder before he faces the cameras

higher than we can hope to produce and study in laboratories. In the last 20 years cosmic rays have proved a limitless source of new discoveries about matter."

"The understanding of what goes on in the atom," Dr. Fermi said, "is a field we have barely scratched yet. It's rather amazing that we have been able to make this much progress toward harnessing the atomic nucleus with such a small amount of knowledge. There are so many new particles of energy and so many interrelationships between them that years of research are before us.

"We're only at the point earlier scientists were at when they were trying to understand the solar system without knowing much of anything about the nature of light and gravitation."

Atomic Energy Chairman

DR. ROBERT F. BACHER, Chairman of the Division of Physics, Mathematics and Astronomy, has been appointed Chairman of the Committee on Atomic Energy in the Department of Defense Research and Development Board.

The Committee consists of four civilian and six military members who will assist the RDB in atomic energy aspects of the military research and development program. They will also coordinate the research and development activities of the Department of Defense with those of the Atomic Energy Commission—of which Dr. Bacher was the sole scientist member for two and a half years, before coming to Caltech in 1949.

JPL

MAJOR GENERAL ELBERT L. FORD, chief of Ordnance, arrived in Pasadena last month from Washington, D. C., accompanied by Brig. Gen. Merle H. Davis, chief of the Ammunition Branch, on an inspection tour of the country's 14 ordnance procurement districts. Major Ford took occasion to praise the Jet Propulsion Laboratory for the part it has played in the development of the guided missile program of the armed forces (see page 11)—and to remark that Caltech scientists, under the direction of Dr. Louis G. Dunn, director of the Jet Propulsion Laboratory, had "made an outstanding contribution to defense preparations."

Also last month residents of Pasadena, Altadena and La Cañada—in the areas adjoining the Jet Propulsion Laboratory—were aroused to the point of preparing petitions, demanding removal of the installation, because of the "unbearable noise" which comes from it.

Moving the lab—if such were possible—would cost between \$30,000,000 and \$40,000,000. If it were moved to an isolated area, it would lose approximately 50 to 75% of its technical personnel. Right now it has 699 people on its payroll—which amounts to something under \$3,000,000 annually.

As a result of citizens' complaints, the Pasadena city board of directors last month toured the laboratory to see what caused the noise, how bad it was, and what was being done to cut down on it.

Unfortunately, the citizens themselves couldn't be shown around the facilities, because all work being done is for the military, and thus most of it is classified.

Dr. Dunn explained that he thought complaints had arisen because people don't know what's being done at the lab, pointing out that people tolerate bus, truck and plane noises because they know the source of the noise.

"But people don't know what we're doing here," he said. "They become suspicious and they object. Actually the noise from here, measured in decibels, is not nearly so loud as a passing car."

To deaden noise, the lab has already muffled all but two of its nine rocket motor test cells, and the wind tunnel is being soundproofed now. About \$65,000 has been spent to date on noise studies and soundproofing, and the current \$7,000,000 annual budget of the lab provides funds for a continuing sound-suppression program.

"I don't know what we could do to stop (the lab)," said Pasadena's Mayor A. Ray Benedict, after the tour, "—and I don't think we should try to. They're doing a good job, not only for America but for all the free people in the world. It's one of the most outstanding institutions of its kind in the United States."

Guggenheims

FOUR MEMBERS OF THE Institute faculty received Guggenheim Fellowships this month, when the John Simon Guggenheim Memorial Foundation announced its annual fellowship awards.

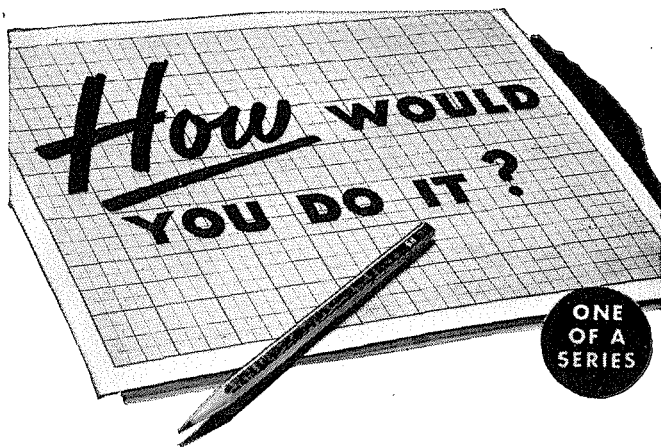
Dr. Robert B. Corey, Professor of Chemistry, received a two-year fellowship to continue his investigations of the structure of proteins "by means of a complete X-ray diffraction study of wet crystals of lysozyme halides."

Dr. Albert Tyler, Professor of Embryology, was also granted a two-year fellowship for his studies of prolongation of the functional life span of spermatozoa and of the physiology of fertilization.

Dr. Sterling Emerson, Professor of Genetics, was granted a 12-month fellowship for his studies of inter-related gene-controlled reactions on the fungus *Neurospora*.

Dr. Arthur Galston, Senior Research Fellow in Biology, who has been on leave from the Institute since last summer to study in Europe on a Guggenheim, was granted a three-month renewal of his fellowship to continue investigations into the biochemistry of floral initiation.

CONTINUED ON PAGE 28



PROBLEM—You are designing a cabinet-type oil heater. The oil and air metering valve has to be placed at the bottom. You now want to provide a manual control for the valve located on the cabinet front where it is easy to see and to operate. How would you do it?

THE SIMPLE ANSWER—Use an S.S.White remote control flexible shaft to connect the dial to the valve or to a rod running to the valve. The latter method was used in the heater illustrated below. The flexible shaft will provide smooth, sensitive control and will allow you to put the dial anywhere you want it.

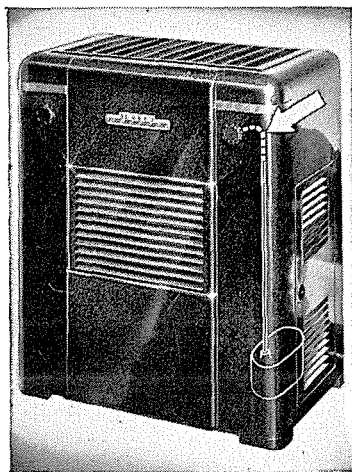


Photo courtesy of Quaker Mfg. Co., Chicago, Ill.

* * *

This is just one of hundreds of power drive and remote control problems to which S.S.White flexible shafts are the simple answer. That's why every engineer should be familiar with the range and scope of these "Metal Muscles"* for mechanical bodies.

*Trademark Reg. U.S. Pat. Off and elsewhere

WRITE FOR BULLETIN 5008

It gives essential facts and engineering data about flexible shafts and their application. A copy is yours free for asking. Write today.



THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO.  Dept. C, 10 East 40th St.
 NEW YORK 16, N. Y.

THE MONTH . . . CONTINUED

Cancer Grants

GRANTS-IN-AID totalling \$21,750 were awarded to three Institute scientists by the American Cancer Society this month.

DR. HENRY BORSOOK, Professor of Biochemistry, was given \$10,000 to be used in his work on biological synthesis of proteins using radioactive isotopes.

DR. JAMES BONNER, Professor of Biology, received \$7,000 to further his research on the biochemistry of plant tumors.

And **DR. SEYMOUR BENZER**, American Cancer Society Research Fellow in Biology, received a \$4,750 fellowship to study under Dr. Andre Lwoff at the Institut Pasteur in Paris.

Smog and Health

THREE INSTITUTE FACULTY members have been named to a new 16-man Los Angeles County Medical Commission to study the effects of smog on health: Dr. George W. Beadle, Chairman of the Biology Division; Dr. Frits Went, Professor of Plant Physiology; and Dr. C. A. G. Wiersma, Professor of Physiology.

Appointment of the commission followed a recommendation for such a study by the Los Angeles Medical Association, after a survey of its members recently revealed that 2,651 out of 2,803 doctors found reason to believe that air contamination was responsible for creating, or aggravating, ill health in this area.

Honors and Awards

DR. ROYAL W. SORENSEN, Professor Emeritus of Electrical Engineering, has been elected an honorary member of the Institute of Electrical Engineers of Japan. He was recommended for the honor by the American Institute of Electrical Engineers when the Japanese society asked for the name of "a noted American scientist or engineer closely connected with AIEE . . . who had an interest in Japan."

Dr. Sorensen, who organized Caltech's electrical engineering department in 1910 and headed it until his retirement last July, was president of the AIEE in 1940-41. He visited Japan in 1947 as the engineering member of a six-man scientific advisory group appointed by the National Academy of Sciences at the request of the federal government.

Others who have received this honor from the Japanese society are Thomas A. Edison, Frank B. Jewett, Irving Langmuir, Elmer A. Sperry and A. E. Kennelly.

DR. EDWIN P. HUBBLE, staff member of the Mt. Wilson and Palomar Observatories, will deliver the R. A. F. Penrose Memorial Lecture at the general meeting of the American Philosophical Society in Philadelphia, April 19-21. He will speak on "Explorations in Space: The Cosmological Program for the Palomar Telescopes."