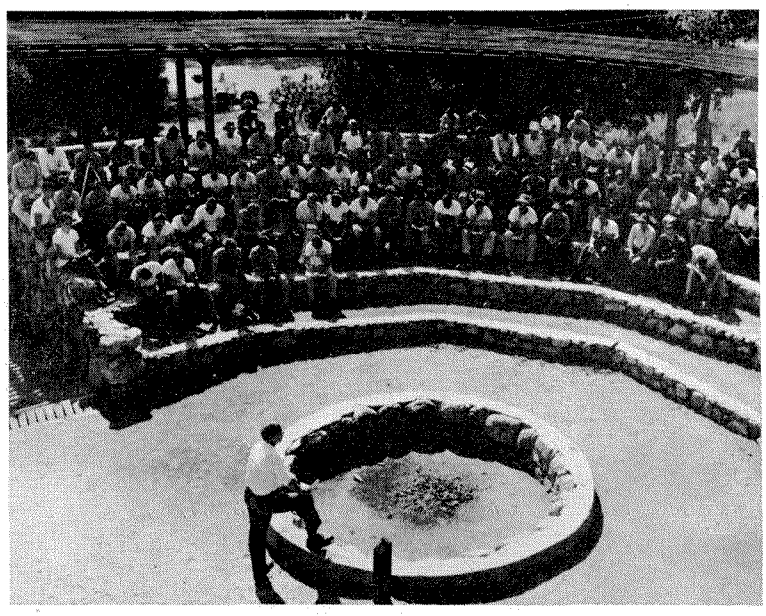

THE MONTH AT CALTECH

NEW STUDENT CAMP

AS THE OCTOBER issue of E&S goes to press, 180 freshmen and 40 new upperclassmen, transfer students from other institutions, are attending New Student Camp, which is being held as usual this year at Camp Radford up in the San Bernardino Mountains.

The three-day Camp opened on Friday, September 24, with the following faculty members on hand to greet the newcomers: Deans Foster Strong, Paul Eaton, Winchester Jones and Franklin Thomas, and Professors Chester Stock, Ernest Swift, Robert F. Sharp, Wallace Sterling, Fred Lindvall, Donald Clark, George Beadle, and Harvey Eagleson.

Between song-fests and get-acquainted sessions, the new students heard from President DuBridge and Alumni President Howard Lewis; from the Director of Athletics and the Coaches for Track, Football and Basketball. Chuck Forester, Senior Class President, told the camp how he made his first "D", and other members of the student body described ASCIT social activities, life in the student houses, the "Y" program, and Throop Club plans for the coming year.

JOHN MILLS, 1880-1948

IN 1945, when John Mills retired after twenty years as Director of Publications for the Bell Telephone Laboratories, he joined the staff of the California Institute of Technology as a Student Counselor. And from that time until his death, on June 14, the Institute, and the many undergraduates who came to him for guidance and vocational advice, made grateful use of his wise understanding of the ways of the scientific worker and the ways of the world; of what the scientist must have to offer, and what is expected of him. Mr. Mills was an engineer and a trainer of engineers. And because he was a man who for many years had given much of his thought to understanding the minds of others, he came to the Caltech campus well equipped for his duties.

When he was Personnel Director for Western Electric Company during the period of its rapid expansion following World War I, Mr. Mills evolved six "man specifications" for the selection of able college-trained technical personnel: intellectual curiosity, ability to study, habituation to study, ability to learn from men, ability to cooperate with them, and ability to lead them. At Caltech, when undergraduates came to him for vocational direction, Mr. Mills shared with them his conviction that the college graduate's value to engineering and science lay, not just in his ability to fill a particular job, but in his possibilities of growth.

John Mills was born in Morgan Park, Illinois, in 1880. He graduated from the University of Chicago in 1901 and received his Master's Degree in Physics from the University of Nebraska in 1904. After several years of teaching, first at Western Reserve, and later at M.I.T. and Colorado College, he joined the engineering department of the American Telephone and Telegraph Company, where he worked on problems connected with trans-continental and transoceanic wireless telephony. Besides making several major contributions to the communications art, Mr. Mills was the author of many books, including **Letters of a Radio Engineer to his Son, Electronics Today and Tomorrow** and **The Engineer in Society,** published in 1946.

To the public, John Mills is probably best known as the creator of the Bell Telephone exhibits at the world's fairs in Chicago, San Diego, Dallas, San Francisco and New York. Mr. Mills believed that the public really enjoyed first-rate scientific novelties; given them, it would be receptive to a sound explanation of the intricacies involved. The success of "Pedro the Voder" and "Oscar," the binaural dummy at the Chicago Fair, bore him out, as did the audition at the New York fair, which gave people a chance to listen to the reproduction of their voices, and the souvenir telephone calls which indulged the temptation to eavesdrop and offered the excitement of chance.

PLANT RESEARCH--AND GUINEA PIGS

FOUNDATIONS ARE being poured for the Institute's new Earhart Plant Research Laboratory and it is expected that the project will be completed in April, 1949.

The new laboratory, located at the corner of Michigan Avenue and San Pasqual Street, is being built at a cost of $407,000, granted to the Institute by the

Earhart Foundation. When completed, it will be the only air-conditioned laboratory of its kind, and will enable Caltech plant physiologists to grow plants under any and all conditions of weather. Cold, hot, dry, wet, light or dark, windy or quiet, no matter what the weather, it will be possible to produce it in this new lab.

The new underground biology annex, built at a cost in excess of $100,000, is nearing completion and is already partially occupied. The annex, with some 7,000 square feet of floor space, is entirely underground and so built that automobiles may be parked on its roof. It adjoins the west wing of the Kerckhoff Biology Laboratory.

First occupants were some 300 guinea pigs given the institute by a grower who called George W. Beadle, division chairman, recently to explain that the bottom had dropped out of the guinea pig market so said animals were available to Caltech for the asking. Dr. Beadle pushed the occupancy date ahead a bit to accommodate the animals.

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(Editor's note—We now have 400 guinea pigs)

LIFE AT CALTECH

THE AUGUST 23rd issue of LIFE Magazine carried a two-page picture story of Caltech's Guam Harbor research project, being conducted for the U. S. Navy under the direction of Dr. Robert T. Knapp. This work is being done with a 120-foot square model of Guam's Apra Harbor, located in a steel hangar at Azusa. One of the objects of the project is to determine the proper design for Apra Harbor installations so as to keep typhoon damage to a minimum and the port open at all times.

A SCIENTIST AND PHILOSOPHER

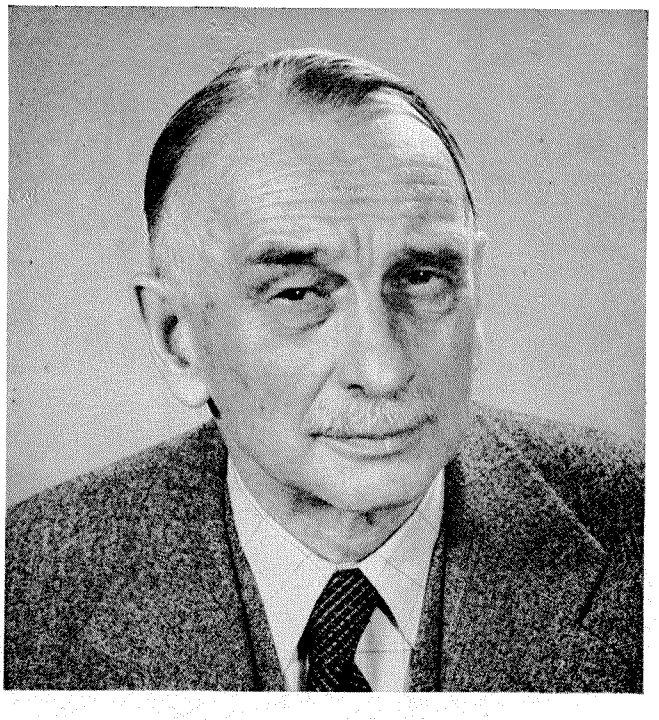
ON SEPT. 5, Dr Richard Chace Tolman, who has been called the world's greatest cosmologist, died at Huntington Memorial Hospital after a three-week battle against the effects of a stroke suffered at his home in Pasadena.

One of the nation's top atomic scientists, Dr. Tolman served as scientific adviser to Maj. Gen. Leslie R. Groves on the Manhattan Project during the war. In 1946 he became scientific adviser to Bernard M. Baruch on the United Nations Atomic Energy Commission.

His theories on the structure of the universe ranked Dr. Tolman alongside Dr. Albert Einstein in the field of cosmology. His versatility made him an expert, not only in cosmology and atomic energy, but in the fields of relativity, thermodynamics, statistical mechanics, chemistry and mathematical physics as well. Beyond his scientific achievements, however, Dr. Tolman will be remembered at Caltech for his helpfulness to students and faculty alike. From 1934 to 1946 he served as Dean of the Graduate School.

Tolman was born in West Newton, Mass., in 1881. After being educated at the Massachusetts Institute of Technology and in Germany, he taught at M.I.T. and the Universities of Michigan, Cincinnati, California and Illinois. During World War I he served as a major and chief of the dispersoid section of the Chemical Warfare Service. From 1919 to 1921 he was director of the War Department's Fixed Nitrogen Research Laboratory.

In 1921 Dr. Tolman came to Caltech as professor of physical chemistry and mathematical physics. He left temporarily in 1940 to serve as vice-chairman of the National Defense Research Committee. He was



Dr. Richard Chace Tolman, 1881-1948

awarded the Medal for Merit by the United States Government for his war work as adviser to General Groves. The British Government more recently made him an Officer of the Order of the British Empire—the highest honor bestowed upon foreigners.

In 1946 Dr. Tolman was appointed by General Groves to head the declassification board of the U. S. Atomic Energy Commission. He recommended the release of some atomic energy data and predicted great advantages to industry and medicine, particularly in the field of cancer research, when all the secrets of the Manhattan Project could safely be revealed.

Dr. Tolman later served as adviser to Bernard Baruch on the commission for world control of atomic energy.

He returned to Caltech late in 1946. On campus he was known both as a scientist and a philosopher.

"Science," he said in a now-famous address delivered at Brown University in 1947, "is concerned with judgments of existence, not judgments of value. The judgments of men and of nations of men as to what is good depend partly on the static factors of childhood training and the prevailing custom, but partly also on the dynamic consequences of the new spiritual insights which determine the teachings of ethical leaders, and which each of us may sometimes experience in the closet of his conscience. As the judgment is being reached, science can advise as to the nature of the facts. When the judgment is being advocated, science can point out its consequences. When the judgment is being implemented, science can supply tools for the accomplishment. But in its final essence, ethical judgment is a creative activity of man.

"It is my faith that the ethical insight and scientific intelligence of man are such that the control of evil is possible. I am sure that humanity will continue to encounter great troubles, but I do not think that civilization will destroy itself. To surmount our troubles, we shall need courage, and patience, and clarity of thought, and sincerity in the advocacy of fair and reasonable courses of action. For these virtues we may pray, each in his own fashion."