

# C. I. T. NEWS

## FIRST TEST OBSERVATIONS MADE WITH PALOMAR MIRROR

**M**AX MASON, chairman of the Observatory Council at the California Institute, has announced that the first test observations, preliminary to the work of making adjustments on the 200-inch telescope, have been made at the Palomar Mountain Observatory. These test observations, both visual and photographic, were taken with the telescope at vertical position, at 60 degrees and at 30 degrees both north and south.

Dr. John A. Anderson, executive officer of the Observatory Council, who figured the mirror and supervised its grinding and polishing, was the first Palomar observer. He used a small reading glass for an eye piece to peer at the image formed by the big mirror. Others who followed him included Dr. Ira S. Bowen, who will direct both Mt. Wilson and Palomar Observatories; Dr. Edwin Hubble and Dr. Milton L. Humason of the Mt. Wilson staff; Dr. Russell W. Porter, who designed the observatory building and assisted in design of the entire telescope; Marcus H. Brown, who had charge of the CalTech optical shop during the 11 years of grinding and polishing; Bruce Rule, project engineer; Byron Hill, construction engineer at the Observatory; and Professor J. G. Oort, visiting astronomer from Leiden, Netherlands.

These first test observations were made in order to locate the point where the axis of the telescope cuts the photographic plate and to check the entire instrument under actual operating conditions. A great deal of additional completion work and adjusting remains to be done; therefore, the telescope will not be ready to begin an actual research program until the summer.

A final grant of \$300,000 has been made to the California Institute by the Rockefeller Foundation to complete the Palomar Telescope, primarily to cover costs of auxiliary equipment, such as a number of special cameras to be used at the Coude focus, spectrographs, photometers, and other astronomical instruments. The original grant was made in 1928 for \$6,000,000 and an additional grant of \$250,000 was made last year to cover both the rising costs of materials and the maintenance costs that continued during the war when no work was done on either the telescope or its 200-inch mirror. This brings to \$6,550,000 the total cost of the Palomar project which includes an astrophysics laboratory, optical and machine shop on the CalTech campus, and numerous installations atop Palomar Mountain in addition to the 200-inch telescope and the 8-, 18-, and 48-inch Schmidt Cameras.

## C.E. STUDENT PLACES IN SALT LAKE SPEECH TOURNAMENT

**I**RVING SULMEYER, civil engineering senior, placed third in oratory at the Western Association of Speech Tournament held in Salt Lake City late in December. His paper, "The Golden Thread" was based on Wendell Wilkie's "One World" and traced Wilkie's contribution to constructive thinking on world peace. Approximately 80 colleges all over the country were represented at the Tournament.

## VON KARMAN RECEIVES '47 JOHN FRITZ MEDAL



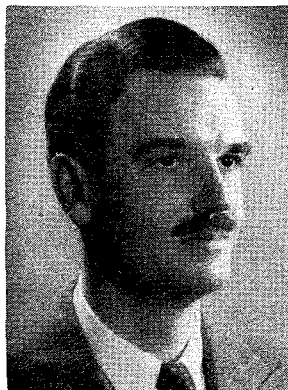
**T**HEODORE von Karman, director of the Guggenheim Laboratory of Aeronautics at the California Institute, has been named to receive the 1947 John Fritz Medal, highest engineering honor awarded in this country.

In choosing Dr. von Karman as the '47 Fritz Medal recipient, the combined engineering societies of the United States cited him as "a creative leader, stimu-

lating teacher and wise counselor in engineering and physical research in the fields of aeronautical and structural sciences; for his many applications of mathematical and physical theory to the sound solution of engineering problems."

Von Karman recently returned to the Institute, having served during the war as aeronautical consultant to the War Department. A native of Hungary, where he had been director of the Aeronautical Institute at the University of Aachen, von Karman first came to CalTech in 1928 as professor of aeronautics, and was recently elected to the British Royal Society, was awarded the honorary degree of Doctor of Science by Princeton University, and was the 1946 Wright Brothers Lecturer of the Institute of Aeronautical Sciences.

## KOEPFLI IN ENGLAND WITH STATE DEPARTMENT



**D**R. JOSEPH B. Koepfli, research assistant at the Institute, has been appointed a member of the U. S. State Department mission on science and technology. He left for England early in January aboard the S S Queen Elizabeth with his wife and two children. Dr. Koepfli is attached to the U. S. Embassy in London as senior scientist for a period of one year on this new mission, the first provision

made by the government to provide assistance to European science and scientists at the diplomatic level.

Headed by Dr. Earl A. Evans Jr., chairman of the Department of Biochemistry at the University of Chicago, the mission will cover all fields of science by means of a rotation service whereby leading men in various scientific fields will be appointed for one year. The initial staff, of which Dr. Koepfli is a member, will include biochemistry, organic chemistry, physics, engineering, biology, and agronomy.

Koepfli obtained his A.B. and M.A. degrees at Stanford University and the D. Phil. at Oxford. Before coming to CalTech in 1932 he was an instructor in Pharmacology at the Johns Hopkins School of Medicine. A great deal of Dr. Koepfli's recent work at the Institute has been concerned with the study of anti-malarials, and in collaboration with other CalTech chemists, he recently announced successful extraction, from the leaves and roots of a Chinese plant, Ch'ang Shan, of two new anti-malarial chemicals, one of them 100 times as powerful as quinine.

## CHARLES NEWTON -- DUBRIDGE'S NEW ASSISTANT



**C**HARLES NEWTON, New York advertising man, arrived on campus February 15 to assume the duties of assistant to President DuBridge. Newton will work with the President on administrative matters and will have the responsibility for official C.I.T. publications, including the publishing of *Engineering & Science* and the attainment of funds for the Institute, also working with the Alumni Fund Committee.

Newton, who is regarded as one of the leading younger copy writers in the advertising field, has had successful experience in both that field and in publication work.

A native of Kentucky, Newton obtained a Ph.B. Lit degree at the University of Chicago in 1933 and has since worked as feature writer and rewrite man on the *Chicago Herald Examiner*, commercial radio writer and radio director for H. W. Kaston and Company, Chicago, and group copy chief for J. Stirling Getchell, New York.

In 1938, Newton returned to Chicago as radio director for the University of Chicago and was in charge of the planning and production of local and network educational programs. The following year, Mr. Newton returned to New York as group copy chief for Geyer, Cornell and Newell in charge of Kelvinator refrigerators and Schlitz beer advertising. A couple of years later, he left his next position, senior copy writer with the McCann-Erickson advertising agency, to become associated with Dr. DuBridge at the Radiation Laboratory at M.I.T., as group head of special publications. In 1946 he became senior copy writer for the Duane Jones Company, New York advertising agency, where he remained until coming to CalTech.

### FRIDAY EVENING DEMONSTRATION LECTURES SCHEDULE

**T**HE FRIDAY EVENING Demonstration Lecture series will continue through May, meeting in Room 201, Norman Bridge Laboratory of Physics at 7:30 p. m. Demonstration Lectures for spring, 1948 will be:

"Radar", by Dr. W. H. Pickering, Professor of Electrical Engineering, February 27

"The Pitch of Pure Tones", by Dr. L. A. Jeffress, Hixon Visiting Professor of Psycho-biology, March 5

"Engineering Research at the California Institute", by Dr. F. C. Lindvall, Professor of Electrical and Mechanical Engineering, March 12

Two Friday evenings, March 19 and March 26, will be omitted because of Spring Recess. The series will resume in April with:

"Ancient Reptiles of the California Coast", by Dr. Chester Stock, Professor of Paleontology and Chairman of the Geology Division, April 2

"The Chemistry of Plastics", by H. J. Lucas, Professor of Organic Chemistry, April 9

"Electricity in Nerves and Muscles", by Dr. A. van Harreveld, Professor of Physiology, April 16

"Alaska", by Dr. R. P. Sharp, Professor of Geomorphology, April 23

"The Problem of Flight", by Frederick Felberg, Lecturer in Aeronautics, April 30

"Nuclear Physics", by W. A. Fowler, Professor of Physics, May 7

"The Salt of the Earth", by Dr. Ian Campbell, Professor of Petrology, May 14

"Cosmic Rays and the Fundamental Particles of Matter", by Dr. C. D. Anderson, Professor of Physics, May 21.

### FREDERICK W. HINRICHS JR. MEMORIAL AWARD

**E**STABLISHMENT of the Frederick W. Hinrichs Jr. Memorial Award to be made annually at commencement was announced late in January by the Board of Trustees. The award will go to the graduating senior student who, in the opinion of the undergraduate deans, has throughout his days at the Institute made the greatest contribution to the welfare of the student body, and whose qualities of leadership, character and responsibility have been outstanding. The award may be given to more than one senior if there are two whose contributions are of equally high quality, or it may not be given at all if no suitable candidate is available.



**Dean Hinrichs  
1878 - 1944**

The award was named in honor of the late Dean Frederick W. Hinrichs Jr. who, as Dean of Upperclassmen at CalTech from 1923 until his death in February 1944, was respected as much for his knowledge and understanding of the problems of students as the problems of applied mechanics that he taught. A graduate of Columbia and West Point, Hinrichs came to CalTech in 1921 as assistant professor and became full professor in 1923. He had previously taught at the University of Rochester from 1910 to 1917. In 1917, he was recalled to active duty with the Army and served until 1919, retiring with the rank of lieutenant colonel.

### METALLURGIST JOINS M.E. DEPARTMENT

**N**EWCOMER IN the Mechanical Engineering Department is Wilbur R. Varney, recently appointed assistant professor. Professor Varney will teach the undergraduate course in materials and processes and will assist in metallurgy.

Before the war Varney worked in the East with Bethlehem Steel and Taylor-Wharton Iron and Steel Companies and later was an instructor of metallurgy and metallography at Lafayette College, Pennsylvania. During the war he served as a lieutenant in the Navy, and since his release from the service has been working as a metallurgical engineering consultant.

THE CALIFORNIA Institute was among 45 universities throughout the country to receive a Du Pont post-graduate fellowship award in chemistry. The Du Pont Company Fellowship Plan is designed to encourage advanced study in the fields of chemistry, physics, chemical, mechanical, and electrical engineering, and metallurgy. Each post-graduate fellowship provides \$1200 for a single person or \$1800 for a married person, together with an award of \$1000 to the university. The selection of candidates for the awards is left to the universities.

DRS. JOHN A. SCHUTZ and Henry F. McCreery, assistant professors of history in the Humanities Division, recently won 1947 awards from the Pacific Coast Branch of the American Historical Association. Dr. McCreery received the award for his manuscript "German Opinion of the United States during the 1916 Submarine Crisis", and Dr. Schutz received his award for the paper "Thomas Pownall: an Early Champion of Anglo-American Cooperation". Dr. Schutz's award was shared with Professor Wilbur Jacobs of Stanford University.

## C. I. T. BIOLOGISTS DEVELOP PLANT GROWTH INHIBITOR

FROM THE LEAVES of a low, dome-shaped desert plant which Americans call the Brittle Bush, the Mexicans and Indians call Incienso and known to science as *Encelia farinosa*, a new plant growth inhibitor, and possibly a weed killer, has been developed at the California Institute. Not only did biologists James Bonner and Reed Gray determine what the leaves of *Encelia* carried that inhibited the growth of other plants, but they also have been able to reproduce the inhibitor synthetically. Called AMB for short, its is 3-Acetyl-6 Methoxybezaldehyde, a new chemical compound.

Dr. Bonner's observations of *Encelia farinosa* plants growing on California and Arizona deserts led him into the investigation. He noted that while many desert plants apparently attract and favor growth of plants around them, *Encelia farinosa* had little, if any, such plant life about it. It was his curiosity about this occurrence that led to the development of the new plant inhibitor.

Tests of the growth inhibiting qualities of both the extract from *Encelia* leaves and the aromatic synthetic compound containing an aldehyde and ketone group on the same ring were made on tomato seedling plants in nutrient solutions (See Figures), sand cultures, and rich garden soil. Marked inhibition of growth was noted, and water and ether extracts of leaves fed to tomato seedlings in solution culture caused death within one day. Tests showed the extract to be almost as toxic to tomato seedlings grown in sand cultures but less effective in action on tomato plants grown in rich

garden soil. The explanation for this may be that bacteria of the soil reduce AMB's toxic effects.

Although Brittle Bush resin had been used as a pain-killer, an incense, and a varnish, it was in the leaves, not the stem or roots that the biologists found the plant growth inhibitor. Produced synthetically, it is a compound that has never before been reported.

Research on AMB as a spray to kill remains to be done—all information to date has been obtained through introducing the inhibitor into the root systems. It was found that if a plant took up as little as one milligram of AMB, growth was markedly inhibited. If it took up as much as two milligrams it died.

Fig. 1 Tomato seedlings grown in solutions containing various amounts of *Encelia* toxic substance (AMB) for two days. Left to right: (A) no toxic substance; (B) 0.5 mg per plant; (C) 1.0 mg per plant; (D) 2 mg per plant.

Fig. 2 Experimental setup for testing effect of AMB on tomato seedlings. The glass containers shown in Fig. 1 are placed in rows of 10 in wooden boxes so that the roots are in the dark. Left to right: (A) each plant receives nutrient solution but no toxic substance; (B) each plant receives nutrient and 0.5 mg per plant of AMB; (C) each plant receives nutrient and 1.0 mg per plant of AMB; (D) each plant receives nutrient and 2.0 mg per plant of AMB. The picture was taken two days after placing plants in solutions.

