FIFTEENTH ANNUAL ALUMNI SEMINAR - SATURDAY, APRIL 12, 1952

8:30-9:15 A.M.—REGISTRATION
Dabney Hall of the Humanities

MORNING PROGRAM

9:30 to 10:20 A.M.
Your choice of the following:

A. THE STORY OF EMERGENCY SUBSTITUTES FOR PLASMA

J. R. Vinograd, Senior Research Fellow in Chemistry.

Dr. Vinograd is participating in the Institute's work in development of plasma expanders for emergency relief from shock. An Institute product known as oxypolygelatin is now in the final stage of testing and is being considered for large scale production. This timely accomplishment could become of extreme value to the people of the nation at any time. The requisites of a suitable plasma expander, the history of expanders and the developments by the Institute will be of interest to all alumni.

B. PROBLEMS OF THE DESIGN AND OPERATION OF THE GALCIT HYPERSONIC WIND TUNNEL

Henry T. Nagamatsu, Senior Research Fellow.

However important in today's events, the fact that transonic Mach numbers are being consistently obtained by recent jet aircrafts is no longer news. Concurrently with the progress of this adjustment to higher speeds, investigations on the problems of flight at high altitudes and speeds of many times of sound are being conducted for the design of efficient rockets and guided missiles. Dr. Nagamatsu, who received his Doctorate at the California Institute of Technology in 1949, will discuss some of the hypersonic problems in the design of rockets and will describe the GALCIT Hypersonic Research Facilities.

10:20 to 10:50 A.M. COFFEE TIME

10:50 to 11:40 A.M.
Your choice of the following:

A. CHEMISTRY AND PHYSIOLOGY OF SMOG

A. J. Haagen-Smit, Professor of Bio-organic Chemistry.

A study of the recurrent bane of Southern California, air pollution, has produced some surprising information. Identity of air contaminants, meteorological aspects, economic effects and the manufacture of smog before your eyes are parts of the exposition by Dr. Haagen-Smit, who has devoted a long period of time to the investigation of this intimate Southern California problem.

B. OPTIMUM VEHICLE OF FLUORIDATION—WATER OR MILK?

J. E. McKee, Associate Professor of Sanitary Engineering.

About two decades ago it was observed that fluorine promoted the development of sound teeth, if available in proper form to children between one and ten years of age. Dr. McKee has pursued to a tentative conclusion his idea that a more efficient vehicle than water for the distribution of minute quantities of fluorine could be found. Dr. McKee has an interesting technical, economic and human interest story to tell about this new method of fluoridation.

11:55 to 12:45 P.M.
Your choice of the following:

A. METALLURGY OF TITANIUM

Pol Duwez, Associate Professor of Mechanical Engineering.

Present methods of extracting titanium have recently made this metal available in substantial quantities. Increased production during the last year has made possible utilization of the metal in interesting commercial uses as well as those of strategic importance. Dr. Duwez, Chief of the Materials Section of J.P.L. will compare the important extraction methods, economically feasible production rates and forecast a possible future for this new important metal.

B. THE ENGINEERING CRISIS AND WHAT CAN YOU DO ABOUT IT?

John R. Weir, Associate in Psychology.

The manpower commission for the Society of Engineering Education estimated an annual need for the next ten years of 45,000 engineers for civilian purposes alone. Estimated graduates will number less than 20,000 per year and over half of this number will be committed to or subject to, military duty. How is this situation reflected at Caltech and what can be done about it? Dr. Weir has been giving considerable attention to these questions and will present interesting facts and recommendations, which have resulted from his study of this very crucial national problem.

1:00 to 2:00 P.M. LUNCH—STUDENT HOUSES

AFTERNOON PROGRAM

2:30 to 3:30 P.M.
For old times' sake two of the Institute's most popular demonstrations will be presented again:

Dr. E. C. Watson has consented to speak on and display the phenomena of "Liquid Air."

The Electrical Engineering Department will run High Voltage demonstrations.

These two events will be scheduled to accommodate alumni and guests who wish to attend both.

3:55 to 4:40 P.M.
"OPERATION NANOOK" OR HUNTING COSMIC RAYS IN GREENLAND

H. Victor Neher, Professor of Physics.

In August, 1951, Dr. Neher made a trip to Greenland to conduct an investigation of the relative intensities of cosmic rays between Greenland and North Dakota, U. S. A. by making simultaneous flights at these two locations. He will describe the work done in cosmic ray research, what constitutes the rays, measurements made and some of the conclusions of this most recent study. To provide a more intimate understanding of this interesting lecture Dr. Neher will run color movies and still pictures of the personal experiences of his party and the unusual ice formations of the country.

5:00 to 6:30 P.M. SOCIAL HOUR

Relax and meet your friends at the Elks Club, 400 West Colorado Street, Pasadena. Cocktails available. Dinner will be served at 6:30 in the club banquet room.

EVENING PROGRAM

6:30 P.M. DINNER
Elks Club
400 West Colorado Street, Pasadena
Dress—Informal for men and women.

AFTER DINNER

Introductions by Dr. Robert P. Sharp, President of the Caltech Alumni Association.

Remarks by Dr. L. A. DuBridge, President of the California Institute of Technology.

NATURAL RESOURCES AND HUMAN POPULATION

Harrison Brown, Professor of Geochemistry.

If the standard of living of all the peoples of the world were raised to the equivalent of that existing in the United States, what would be the balance between demand and supply of natural resources? Dr. Brown will speak on this and related socio-economic matters. He left the Institute for Nuclear Studies at the University of Chicago to join the Division of Geological Sciences of the California Institute of Technology in 1951. His war work during the years from 1942 to 1946 included the assignment as Assistant Director of Chemistry on the Plutonium Project at Oak Ridge.