

FIFTH ANNUAL ALUMNI SEMINAR

Speakers at the Fifth Annual Alumni Seminar emphasized the fact that we in democratic countries, particularly in the United States of America, have much to fight for, discussed methods of defending ourselves against attacks, told of how best to reach our production goals, set forth the historical aspect of our position in the war, and, for good measure, included talks on the diverse subjects of fishing and distribution of electricity.

Dr. Eugene C. Blake of the Pasadena Presbyterian Church, speaking at the chapel service which opened the seminar, reminded his listeners that the founders of our country thought of it as a new land whence liberty for all men of every race and nation would spring. He declared that "In these latter days, America's once accepted universal mission has too often been forgotten or rejected. The fearful isolationist, and the selfishness that so easily overcomes us all, have nearly betrayed us into an anti-Christian nationalism that as God lives is doomed and is therefore not *worth* dying for."

At one of the two ten o'clock meetings, Professor G. R. MacMinn discussed the meaning, dangers, and the faults of democracy at set forth by Walt Whitman whose greatness, in Prof. MacMinn's words, "lies in his poetic optimism, in his prophetic faith in a developing democracy." Whitman was a staunch supporter of democracy although he recognized and detested its political corruption, its "bats and night dogs" in the capitol at Washington. He regarded political democracy as a gymnasium, "a training-school for making first-class men." Whitman was an internationalist too, for as he believed "in the sacredness of the Union, so he believed in a 'fraternity over the whole globe'—a democratic comradeship uniting 'all nations, and all humanity'."

While Professor MacMinn was telling one group about Walt Whitman, Professor Sorensen was relating to another group some of his recent experiences in a recent discussion of power distribution. The discussion centered on the problem of tracing the flow of electricity from a number of sources to a number of loads when all are connected through one network. One of Professor Sorensen's tasks had been to aid in convincing a number of politically-trained men that there is no unique way for tracing the physical flow of energy through a network from sources to loads and that the

flow must, for accounting and other practical purposes, be considered to be according to contact.

In one of the eleven o'clock sessions, Professor Michael discussed and illustrated the science and techniques of trout fishing. He told how knowledge of mechanics, entomology, optics, hydraulics, chemistry, and Meteorology contributes to filling the creel. This talk aroused a great deal of curiosity and enthusiasm and probably caused several alumni to set forth in search of streams in which to apply their newly acquired or rejuvenated hobby. One Los Angeles newspaper carried in its sports pages a complete story of the talk.

Offsetting the light nature of the talk on fishing, and occurring at the same time, was the talk on poison gasses by Doctors Carl Niemann and Joseph Koepfli. The speakers pointed out that an almost impossibly large load of poison gas would be required to cause any considerable loss of life on the Pacific coast. It was also stated that the Japanese, if they attempt gas attacks, probably will use mustard gas and Lewisite which they

have already employed. In connection with combating poison gases, the listeners were told that civilians can obtain some protection, even without masks, by going indoors, sealing doors and windows, and staying indoors until decontamination squads have completed their work.

The lunch period permitted many alumni to renew acquaintances while enjoying lunch in the pleasant surroundings of the student houses. That this feature of the Seminar was popular is attested by the fact that three hundred alumni and friends were served.

Following lunch were presentations of "The Engineer's Place in the Present Emergency" and "Protection from Aerial Bombardment". In the former, Professor Robert D. Gray urged directors of industries to take upon themselves the responsibility for adapting their plants to war production. The importance of this step was emphasized by the statement that "If too many managers wait too long for orders from Washington, they may find that the orders are coming from Berlin or Tokyo instead". In addition, Professor Gray stated that every engineer owed it



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to himself and to his country to find a job which challenges him and uses every bit of his ability and urged engineers holding jobs not to their liking to find jobs which they liked.

In introducing Mr. Harald Omsted who subsequently spoke on "Protection from Aerial Bombardment," Professor Martel reminded his audience that civilian defense was really an ancient activity, Aeneas the Peloponesian, having written about fifth columnists and blackouts in 360 B.C. Professor Martel said that this interesting information was found in "Through Engineering Eyes" by Helen Cullimore. Mr. Omsted, now working with the structural engineering group at the Institute, held his listeners in rapt attention as he related his experiences before, during, and after the German invasion of Norway. During his stay in Norway, Mr. Omsted designed a number of air-raid shelters and saw some of the communities containing them bombed. His experiences convinced him that we should build shelters in the areas containing harbor facilities and plants producing oil and war implements. Mr. Omsted estimated that shelters could be made of timber, concrete, and masonry, then still on the non-critical materials list, for as little as \$22 per person to be sheltered. He added, however, that if the building were delayed, both materials and labor might become too scarce to permit their construction.

The 2:30 p.m. meetings were devoted to an industrial relations seminar and to a talk by Dr. J. E. Wallace Sterling on "The War in Review and in Prospect". At the industrial relations seminar, those attending held a question and answer discussion regarding the engineer's place in industry, carrying into greater detail the subjects opened earlier by Professor Gray.

Dr. Sterling stated that Japan had not yet been entirely successful. She had substantially achieved her first two objectives; that is, she had disrupted communications by knocking out Hawaii, Wake, and the Philippines and had gained many

of the things she needs. Now Japan will require time to rehabilitate the conquered territory, consolidate her positions, and knock out any potential bases for counter-attacks. The strain of Germany's effort was beginning to tell on her, declared Dr. Sterling. Goebbel's preaching of fear of defeat rather than hope of victory was a favorable sign, as was the loss by Germany of many of her reserves intended for a spring offensive. "If the proposed second front can be opened in time", said Dr. Sterling, "it might prevent Hitler's threatened offensive in the Near East. The British have over 750,000 men in Egypt and vicinity who are doing nothing but waiting a possible German offensive. If the latter is made impossible by the opening of a new western front they could be used to work against the Japanese in India."

At the single closing meeting, Dr. Millikan declared "The greatest world issue today is whether war, the destroyer, or science, the creator, will survive. The issue is between life for the race guided by science or eternal war caused by self-styled supermen." Dr. Millikan related that over a year ago a Japanese general had asked him to state the attitude of United States toward Japan. Dr. Millikan said that he told the general that civilized nations would band against Japan and that "You Japanese have cut your own jugular vein and your doom is sealed."

Following the last speaker, alumni thanked the Institute staff, and the 1942 Seminar Board and Committees for their work in making the seminar possible. In addition, Clarence Kiech, who conceived the Seminar idea and brought the first seminar into being in 1938 was honored with a vote of thanks.

Registration records show that 204 alumni and 189 guests attended the Seminar.

That the Seminar resulted in considerable publicity for the Institute is shown by the fact that the aggregate circulation of newspapers containing advance notices and subsequent articles about the Seminar was well over a million.

CALTECH SUMMER PROGRAM

FULL-TIME SUMMER COURSES

to be given as part of the Engineering, Science, and Management Defense Training Program authorized by the U. S. Office of Education.

Professor Franklin Thomas, in general charge of all Institute courses given as part of the ESMDT program, recently announced that arrangements were being completed for giving the following full-time tuition-free courses during the Summer of 1942.

AERONAUTICAL ENGINEERING and ULTRA-HIGH FREQUENCY TECHNIQUES have been organized primarily for Army and Navy officers, but enrollment is open to a limited number of civilians.

BASIC ELECTRIC CIRCUITS AND MACHINERY.

The courses listed below are open to both men and women, but they offer a particular opportunity for women to prepare themselves for essential work in war industry and defense:

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Detailed information and application blanks can be secured by addressing the Committee on Engineering Defense Training Courses at the Institute.

SCIENCE MUST RULE TO BAN WAR

"The life of the human race must be governed by science or we shall have eternal war," Dr. Robert A. Millikan told a meeting of the University Club in Los Angeles. For the management of the post-war period, Dr. Millikan offered the formula of "international, collectivist, enlightened co-operation."

"Science is the creator, war the destroyer. The two are in a death struggle today as never before in history," he declared.

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ROCKEFELLER FOUNDATION GAVE CALTECH \$77,000 DURING 1941

Rockefeller Foundation grants to Caltech in 1941 totaled \$77,000, according to the annual review released by Raymond B. Fosdick, Foundation president. One grant of \$40,000 was for the support, as previously authorized, of the development of organic chemistry in its relationship to biological problems.

The other \$33,000 was for research on the structure of anti-bodies and the nature of immunology reactions, under the direction of Professor Linus Pauling, payable over three years.

One grant, out on the far borderline between chemistry and biology, was designed to assist Professor Pauling and his associates in their attempts to gain an understanding of the structure and formation of these chemical substances called "anti-bodies," whose presence in the blood of certain people is responsible for the fact that they possess a "natural" immunity to infectious diseases, and whose absence from the blood of other people makes them susceptible.

ENGEL CAPTURED

Dr. Rene Engel, former instructor in geology at Caltech, is interned in the Santo Tomas University at Manila, according to word received by Mrs. Engel from Francis B. Sayre, United States High Commissioner to the Philippine Islands. Mrs. Engel is the author of the book, "I Remember the Emersons," which was recently published.

THOMAS TELLS NEED

Professor Franklin Thomas, head of the civil engineering department at the California Institute of Technology, recently spoke at the Kiwanis Club luncheon in Pasadena on how the Institute has made adjustments in order to assist the war effort.

He explained a course to be stressed next fall for the study of a new science by which targets are located by radio. There are now seventy-five courses at Caltech applied to the war program, he said. Demand for students is so great that the entire junior class in civil engineering has been offered summer work by the Aeronautical Authority. He told of naval and army officers scheduled for assignment to Caltech by the score in the months ahead.

DR. MILLIKAN STRESSES RESEARCH

Dr. Robert A. Millikan took a prominent part in the first annual meeting of the board of directors of the National Science Fund held at the University Club recently. Dr. Millikan, who has been active during the past year in making the National Science Fund known to scientists throughout the country, stressed the necessity for maintaining basic scientific research, even during these war years.

The National Science Fund is a new type of foundation created last spring by the National Academy of Sciences to receive and administer gifts for the advancement of science and to act as a national clearing house in advising donors how to give wisely to science.

COLOR BLINDNESS INHERITED, SAYS DR. MORGAN

Color blindness is transmitted from generation to generation in exactly the same way as the white eye of the drosophila, or fruit fly, in the laboratory, Dr. Thomas Hunt Morgan, distinguished Caltech biologist and Nobel laureate, declared in an NBC broadcast.

During the broadcast of the story, "Are Acquired Characteristics Hereditary?" Dr. Morgan said, "We have a human longing to pass on to our offspring the fruits of our bodily gains and mental accumulations. And, while every scientific investigator has sympathy for this human desire, he cannot permit it to influence him in his examinations of the facts as they actually exist.

"In our own hope for the best, we forget that we are invoking a principle that also calls for the inheritance of the worst. If we cannot inherit the effects of the training of our parents, we escape, at least, the inheritance of their misfortunes. A receptive mind may be a better asset to a child than a mind weighted down from birth with the successes and failures of its ancestors."

Through the imagination and enterprise of Dr. Morgan, new light has been shed upon the vital problems of heredity. Through his tireless years of painstaking scientific research, man's knowledge has been advanced.

SOIL EXPERT AT CALTECH

Dr. Walter C. Lowdermilk, assistant chief of the United States Soil Conservation Service, was engaged, during May, in work at the laboratory which the service maintains at the California Institute of Technology.

Coincident with Dr. Lowdermilk's arrival, it became known that the Chinese government has requested that he act as adviser on forestry, soil conservation, and up-stream flood control in Free China, and that he is making preparations to visit the Orient, probably in the fall.

The invitation to Dr. Lowdermilk to advise the Chinese government on conservation problems, with a view of increasing the food supply for the vast population of that land, bears the signature of Generalissimo Chiang Kai-Shek, and was presented to him in Washington by the Chinese ambassador to the United States.

ICEPLANT

In answer to alumni inquiries, iceplant is still growing on the campus.

Alumni Business and Professional Guide

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"Electroshock" Treatment For Insanity Developed At Caltech

The most recent creation of Caltech's famed laboratories is an apparatus to restore normalcy to violently insane persons by a humane, safe "electroshock." The use of this treatment has returned eighteen of twenty patients suffering from the manic-depressive variety of insanity at the Patton State Hospital to society, and has saved them from long periods of suffering.

The new device, which looks like a tea table with instruments and controls on top, embodies the principle of Ohms law of electricity, and employs large radio transmitter tubes for applying a constant amount of electricity, regardless of resistance. The machine automatically adjusts the voltage to equal the resistance, thus permitting the same dosage every treatment. The result is that physicians can administer electroshock as accurately as they can prescribe aspirin tablets.

On the average, treatments consist of shocks of 600 milliamperes lasting 2/10 of a second, administered twice a week for five weeks. The shock produces immediate unconsciousness, followed by a convulsion lasting about 1 1/4 minutes. Five minutes after the shock, the patient is normal, and remembers nothing of the shock. A pair of electrodes held against the patient's temples by an elastic band delivers the current. There is no danger of electrocution or other serious effects, due to a transformer which insulates the current in such a manner that it cannot be grounded.

Many requests have been received for duplicates of the apparatus, but it is probable that the machine cannot be put into production until after the end of the war, due to priorities materials required.

The new method has given credence to the old superstition that insane persons are sometimes made sane by a bump on the head. The use of shock as a cure for insanity was first tried by the administration of powerful drugs. However, the effects were so terrifying to the patient that it was often impossible to complete the treatments. The introduction of "electro-therapy" in 1938 was given an enthusiastic reception. However, because the resistance of the skin, skull, and tissue varied from patient to patient and from day to day, physicians could not be certain of the exact dosage. This new apparatus has overcome that difficulty. Also, it will be the means of an immense saving to the state, since patients are often released from institutions within six weeks instead of after months or years.

COMMENCEMENT

The annual commencement of the California Institute of Technology was held on June 5, the principal address being delivered by the Agent General for the Government of India at Washington, the Honorable Sir Girja Shankar Bajpai. His subject was "India in Her Relation to the War and the Post-War World," a topic of great importance, for India is one of the key points in the present world conflict. After conferring degrees on behalf of the trustees and faculty, Dr. Millikan spoke on the subject, "The Institute in War Time."

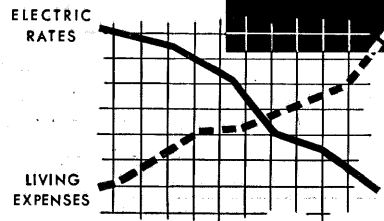
STRONG HONORED

The Franklin Institute for Science, Philadelphia, has awarded the Levy medal to Dr. John Donovan Strong, assistant in astrophysics at the California Institute of Technology. Dr. Strong's award was due to his paper on a new method of measuring the mean height of ozone in the atmosphere.

ENGINEER PASSES

Mr. John F. Hurley, stationary engineer for the past eighteen years at Cal Tech, passed away suddenly on May 8. He is survived by his wife, a son, and a daughter. Mr. Hurley was vice-president of National Association of Power Engineers, California No. 2.

One shining exception..

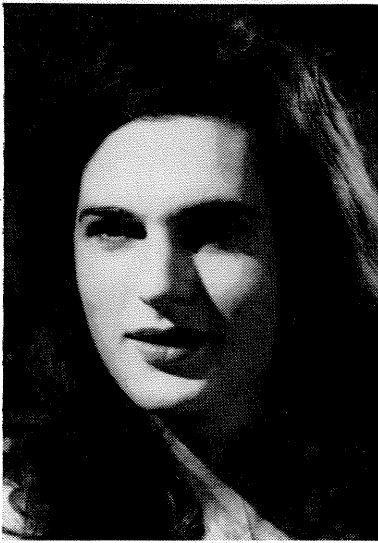


Nearly everything costs more these days. The three essentials—food, clothing and shelter—are higher. And the trend continues up! In the face of this increased cost of living, it is pleasant to note one shining exception. Your dollar spent for electricity today buys more current than ever before—more than twice as much as it did in 1925. And the rate trend has been steadily downward.

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EARL CARROLL CHOOSES CALTECH BEAUTY QUEEN



QUEEN "MARY" WARREN

One might think that the millennium would come before the California Institution for Young Gentlemen would be blessed with a campus beauty queen, but that is just what it acquired in early May as a result of the combined efforts of the California Tech staff and Mr. Earl Carroll. Jack, Alias Mary, Warren, a sophomore of Ricketts House, reigns supreme in pulchritude among the undergraduates. He was selected over Pete "Patricia" Lambert of Dabney and George "Georgia" Osgood of Ricketts.

The Caltech beauty contest, which has received mention in several newspapers and magazines throughout the country, started last March when the unsuspecting Hollywood expert on feminine charm offered, in a form letter, to pick a queen from among submitted photographs. Little did Carroll suspect the overall maleness of the Institute, where a pair of pretty legs still causes whistles and collisions.

Always eager to cooperate with such a distinguished patron, several members of the California Tech staff got together and persuaded each of the houses and Throop Club to choose two of their fairest members. Then three makeup artists from the Pasadena Playhouse, Sonia Henius, Gwen Crawford, and Andrew Campbell, spent four hours applying wigs, rouge, and all the trimmings to the candidates. Glamour photographs were taken by expert Bob Gustavson, Ricketts junior, while Leon Green spent his time snapping innumerable informal shots of the proceedings.

Photographer Gustavson was far from satisfied with his pictures, but the three most successful were finally selected and carefully retouched before submitting them to Earl Carroll. All Caltech waited in suspense while the master scrutinized the entries. It was a day of rejoicing when his answer finally came, declaring, "I was very happy to select the queen of your campus. All of the girls were exceptionally beautiful and I found the selection most difficult. Either the girls are becoming lovelier or after all these years I am slowly succumbing to beauty blindness"

LAUE WRITES FROM MIDWAY

Professor Sorensen received a letter from Eric Laue, '40, who is stationed on Midway Island. Excerpts from the let-

ter, dated March 15th, are as follows: . . . "My past year as an enlisted man in the service has indeed been very valuable. There has been an opportunity to actually see electrical equipment in strenuous service, and further, to work with it in a manner that would not have been possible under any other circumstances. There has been a growing appreciation of the importance of simplicity, ruggedness, and interchangeability in the design of military equipment. The high degree of dependability of the products of the electrical industry make it exceedingly useful and powerful in any setup.

" . . . Personally, I still hope to be able to finish off my training at Tech—a request to do so was blitzed in December, too. In any event, the best of wishes to you.

"Sincerely,
"Eric Laue."

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