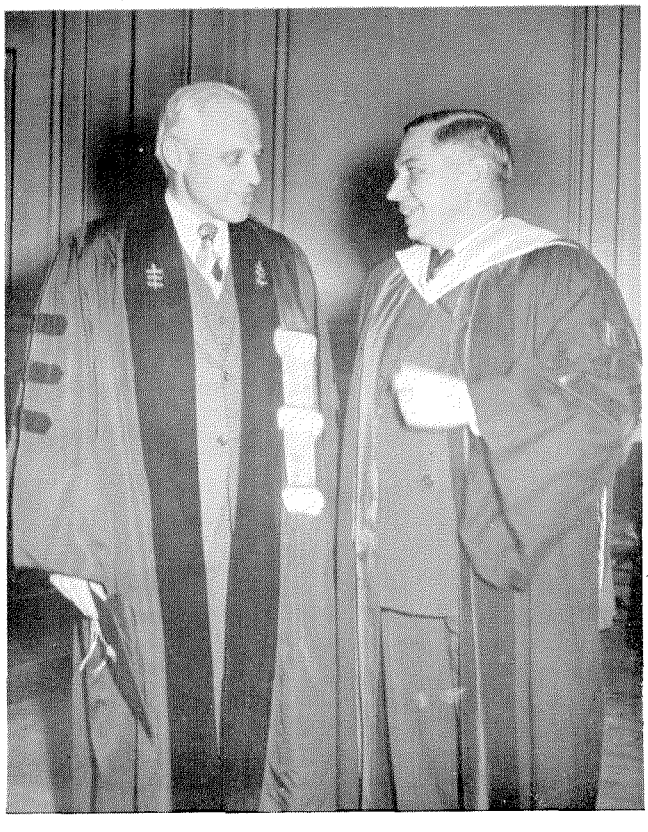
INAUGURATION OF PRESIDENT DUBRIDGE

AT a ceremony November 12 in the Pasadena Civic Auditorium, Lee Alvin DuBridge was formally inaugurated President of the California Institute of Technology. This convocation was attended by 44 institutional delegates, Institute students and faculty, alumni, and other interested Southern Californians. Despite the very rainy weather, over 1500 people were present at the event.

The colorful academic procession commencing the ceremony included trustees and administrative officers of the Institute, special guests including representatives of the United States Armed Forces, Los Angeles City and County officials, representatives of the Associated Student Body, and Allan L. Laws and W. M. Jacobs of the Alumni Association.

Besides delegates from the 44 educational institutions, learned societies, and foundations, four especially honored guests: Vannevar Bush, president of the Carnegie Institution of Washington; Frank B. Jewett, president of the National Academy of Sciences; Alan Valentine, president of the University of Rochester; and Russell David Cole, president of Cornell College, Iowa, were present at the inauguration and other meetings during the week.

Dr. DuBridge was inducted formally into office by James R. Page, chairman of the board of trustees, who introduced the new president to the disinguished gathering.



Presidents Karl T. Compton and Lee A. DuBridge of M.I.T. and Caltech.

KARL T. COMPTON

Dr. Karl T. Compton gave the principal address of the afternoon. He acknowledged "on behalf of American science" a debt which the "rest of us" owe to the California Institute. The debt, Dr. Compton said, was developed here of an institute focusing attention on the future rather than on the past, and on creative science rather than on pure teaching.

M.I.T.'s President characterized Dr. DuBridge's wartime M.I.T. Radiation Laboratory as the greatest such project ever evolved. He used this huge work as an example of the growing partnership of institutional science, industry, and government. He pointed out that the laboratory "steered into production some two and a half billion dollars' worth of radar equipment for air, sea, and ground use."

Four basic trends were mentioned which mark today's technical schools: the extension of research and science; cooperation between technologists; increased financial support of research; and the integration of science and our industrial economy.

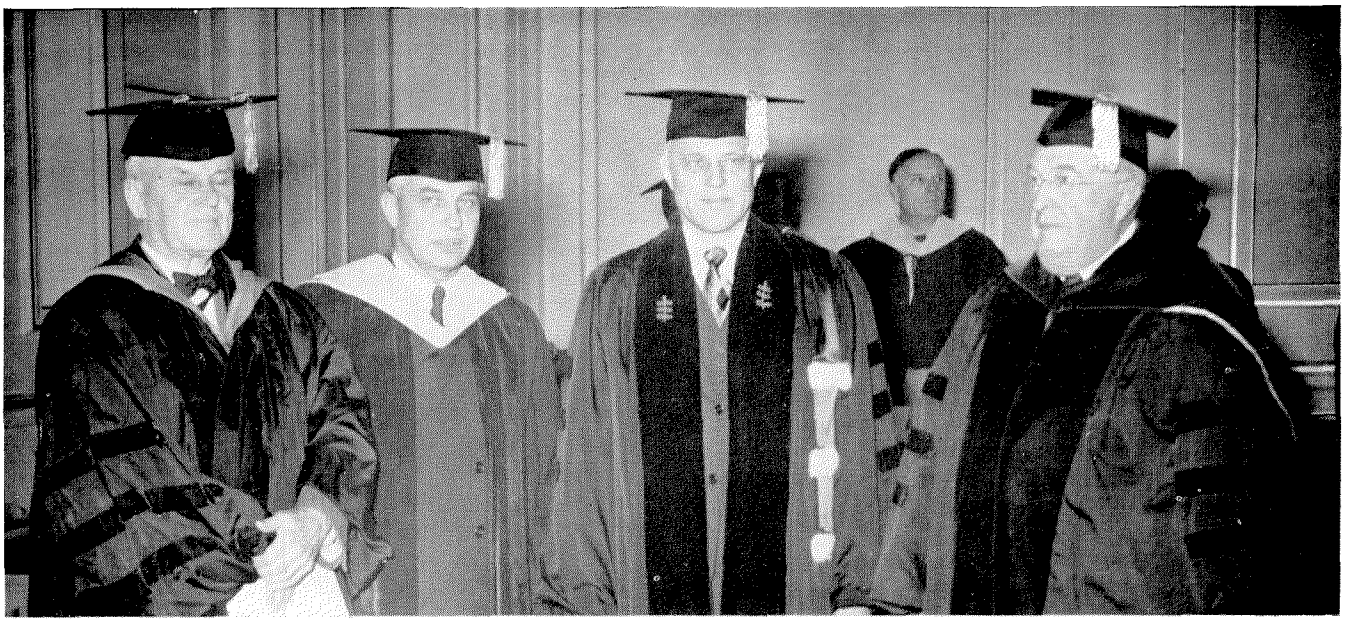
"Science and research should play an even more important role in the programs of technology than they have in the past—new products, new industrial arts, new ideas, are being developed at increasingly rapid tempo. Students of technology in our institutions must be educated more than ever for the opportunities of the future rather than for the techniques of the past."

Dr. Compton added that "operators and draftsmen might better learn their vital but less creative skills in trade schools."

"Teamwork in technological fields is rapidly becoming more important. The recent experiences of the war in atomic energy, radar, rockets, have given a new order of magnitude demonstration of the effectiveness of teams of scientists and engineers, teams of academic and industrial technologists, teams of producers and users. Such teamwork saved time, avoided mistakes and produced results which would have been otherwise impossible."

"It is becoming increasingly expensive to push forward the frontiers of knowledge and to harness nature's forces. Nuclear science, supersonic aerodynamics, gas turbines and jet propulsion, electronics and electronic controls, enzyme chemistry and biology, 200 inch telescope astronomy are all illustrations of this point. With increased taxes and decreased income on endowments this poses a problem that can only be solved by skillful and courageous leadership backed by generous support of constituency and far-seeing, public-spirited citizens and organizations."

"Gradually through the years our technological schools have risen in public esteem from being servants of our industrial economy to being partners in it. This partnership became firmly established and



Robert A. Millikan, former chairman of the Executive Council, vice-president of the Board of Trustees and professor of physics, emeritus; Lee A. DuBridge, president of the California Institute; Karl T. Compton, president of the Massachusetts Institute of Technology; and James R. Page, chairman of the Executive Committee.

widely appreciated during the war. The move to establish a National Science Foundation, the substantial programs of the Army and Navy to arrange research contracts in educational institutions, and above all the Atomic Energy Commission are all illustrations of this partnership."

ROBERT A. MILLIKAN

Dr. Robert A. Millikan, outgoing head of this Institute, passed on a summary of administrative policy to President DuBridge.

"The official seal of the California Institute of Technology, especially designed for it by the illustrious Belgian artist DeVrees, represents an ethereal relay race: two beautiful athletic male figures, speeding through the clouds, the older man—member of the older team—passing on the torch to the eager youthful runner—member of the new team."

"In this symbolism is found the key to the main job which the retiring administration has been trying to do during the past 26 years. During that period it has made every possible effort to discover brilliant young men to whom it might pass on the torch."

"The shape of things to come will continue to be molded in very large measure by that wisdom which reflects the light of the past. I, therefore, take this opportunity to list a number of principles and procedures which represent the collective judgments of the older team, in the conviction that it will be of value for the new team to know them and consider them well.

"Collective wisdom. It is only where decisiveness and rapidity of action are of first importance, as in war and in some types of business organizations, that the concentration of authority and power in a single individual is a sound procedure.

"In educational matters **wisdom** is infinitely more important than is rapidity of action, and wisdom is only obtained from the collective judgments of able, fully informed and independent minds.

"The cultivation of the humanities. The place of the humanities in scientific and technical education—a field in which the Institute has done so good a pioneering job that its example is now being followed by many other somewhat similarly placed institutions, is probably worth considering and strengthening by the new administration.

"Correctives for modern over-specialization. The humanities represent but one phase of the old administration's continuous effort to introduce counter-irritants for the modern necessary evil of intense specialization, both inside and outside of university walls

"The selective principle. The greatest weakness in American education is its lack of an effective vocational guidance technique or mechanism operating at the end of the twelfth grade (the completion of the high-school course) between the secondary and the so-called higher educational systems. Confronted with this lack, and because deeds speak louder than words, the old administration developed its own selectivity system for entrance to the freshman class, and there is unambiguous evidence that it is working extraordinarily well, both in the interests of those who enter here, and equally so in the interests of those who are deterred, altogether without hardship, from entering a field in which they have little or no chance of succeeding and therefore of leading useful, happy, and successful lives. This has been one of the most satisfactory accomplishments of the retiring administration.

"Institute support. The support of the Institute must come from Southern California. It is true that the Institute, like all other American institutions, serves also a national and a world community, as well as a local one, and in so far as it shows marked superiority in that regard it can also draw support, as it has in the past, from more remote sources.

"But every one of the far-seeing men who started it upon its present career with practically no endowment—a unique piece of monumental daring—did so because they believed that this community had potentialities that justified the gamble. The record

seems to have justified their confidence, and the way they ran their race may have some lessons for the new team."

Dr. Millikan then presented Lee DuBridge as "the leader of the new relay team." As one of the active sponsors for Dr. DuBridge's two most important academic appointments, the retiring head of the California Institute assured his audience that "I have every confidence that the new relay team will run faster than the old one was ever able to do."

LEE A. DUBRIDGE

Acknowledging the honor conferred upon him by his appointment to Caltech's presidency, Dr. DuBridge continued: "As I take on these new duties I have often wondered if any man can help but be appalled at the task of running any educational institution in these days. In fact many thoughtful men today are just appalled—period. Are we in a world which is systematically and scientifically plotting its own destruction? Is there any hope that in either national or international affairs we can ever reach the point where we seem at least to be heading in the right direction? Is there any chance that our educational system can adapt itself intellectually, spiritually, or financially, to meet the challenge of the modern world? We may not be too late to win out—but it may take an heroic effort.

"Can we in this country in the coming few years find or produce enough men with sufficient vision, sufficient knowledge, sufficient wisdom and sufficient leadership to paddle hard enough in the right direction and save us from the wrong channel? This clearly is the great challenge which America—and the world—faces.

The new President sketched the part that can be filled by the California Institute in bettering, or perhaps even saving the modern world. "Leading mankind in the task of learning the proper use of this power of science can not be done by men who understand nothing of the nature of this power. Nor can it be done by men who understand nothing else. Clearly our leading men in all fields must understand something of science—and we must have leaders in science who understand something of the world of human beings in which we live."

Quoting from the Institute's charter, Dr. DuBridge went on to say "Every effort shall be made to develop the ideals, breadth of view, general culture and physical well-being of the students. Research shall be made a large part of the work, not only because of the importance of contributing to the advancement of science and thus to the intellectual and material welfare of mankind, but also because without research the educational work of a higher institution of learning lacks vitality and fails to develop originality and creativeness in its students."

"The second world war brought the first great chapter of the history of the Institute to an abrupt close. For a period of five years its campus and its staff were devoted almost exclusively to war service. During this war period the Institute proved—if proof was any longer needed—that it had become one of the nation's scientific assets. And the nation's scientific assets, we have now learned, are among its most important and critical possessions in war or in peace

"Chapter two of the Institute's history began as the war ended. If it was unfortunate that a change in leadership should have to come just now, it is most fortunate that chapter one's leader is still with us to supply help and guidance."

After describing the need for acquiring and retaining the finest faculty possible, and citing methods for doing so, Dr. DuBridge turned his attention to the student body at the Institute. "Acquiring a great faculty—and all that it involves—almost but not quite, insures the second necessary asset of an educational institution—a great student body. Caltech now has a great student body—undergraduate and graduate. But keeping a student body fine is also a continuous task. We want first and foremost men of the highest intellectual calibre—but we want them also to be well rounded human beings—men with spirit, with imagination, with character, with health. Of course, we want, and the world needs, the occasional genius who forgets to get his hair cut. But we also need the man whose intellectual power is combined with the spark of leadership and human understanding. Our present student body is great because it contains so many young men with just these qualities.

"A great institution (please note I say 'great' and not 'big') with a great faculty and a great student body—aimed at the great ideals which were laid down 25 years ago—that is our goal. And achieving it is (if I may use the word once more) a great task.

"I believe it can be accomplished. I pledge my every effort in that direction. I know that the Trustees, the Faculty, the Students, and the Alumni, join also in pledging theirs. We shall need but one more thing—the support of the citizens of this community and of this state. The Institute can rise no higher than the people of the community want it to rise. I believe the people of this community do want it to rise. Unless the Institute is one of the community's most important assets it deserves no longer even to exist. If it has been, and continues to be, one of its most important assets, then you will not only wish—you will **demand** that it continue to move forward. I am here today—and glad to be here—because I believe you will demand just that. When you cease to demand it we will know that somehow we have failed. But with your help we shall not fail."

The Industrial Scientist as Citizen

(Continued from page 3)

beyond strict engineering, where engineers pool their expertness. He accepts without question — beyond some confidential mumbling to most intimate friends —the judgment of legal, personnel and patent departments of those concerned with public relations, advertising and sales and of all those engaged in fabricating, utilizing and exploiting his products of science and engineering.

As an expert he bows to the authority of others, whether actual experts or merely in the position thereof. He keeps strictly out of preserves that are not his own; in fact, if he didn't, he would have his ears boxed and hear his more restrained colleagues say that he was shooting off his mouth without knownig all the facts. Nor will he ask searching or embarrassing questions about those other matters "which aren't his business," for that might endanger his career if not the security of his employment.

And thus by a natural transition he becomes sterile in thought and criticism on matters social, economic