

II. In 1963 he was given the E. O. Lawrence Award for his contributions leading to a "better understanding of the nucleus as well as to the diagnosis of weapon behavior."

**William M. Visscher** is on leave from LASL until June. He is visiting the University of Washington, Seattle, where he is teaching nuclear physics to undergraduates. **William Stein**, another LASL scientist is at the Atomic Weapons Research Establishment, Harwell, England on an exchange program. While he is there, **Douglas Allen**, a physicist from AERE, is spending the year at LASL. **William R. Stratton** has been appointed to serve on the advisory committee of reactor safeguards. This committee advises the AEC about hazards of proposed and existing reactor facilities. **Ralph R. Fullwood** of Hereford, Tex., has recently joined the LASL staff as a nuclear physicist in the weapons division.

RCA Laboratories have named **Simon Larach** a fellow of the technical staff for his outstanding contributions to the field of luminescence. Larach received his PhD from Princeton University in 1954. He has been associated with RCA since 1946. He is a corecipient of a David Sarnoff award in 1966.

**Alfred S. Yue** and **Robert P. Caren** have been named senior members of the Lockheed Palo Alto Research Laboratory. Yue was educated in China, at Illinois Institute of Technology and Purdue University. He has been with Lockheed since 1962. Caren also joined Lockheed in 1962. He has physics degrees from Ohio State University and directs their thermophysics group.

**Gerald A. Rosselot**, vice president of the Bendix Corp., has been appointed executive assistant to the executive vice president for operations. Rosselot joined Bendix in 1953. Before that he had been professor of physics at Georgia Institute of Technology.

**Alan Klein** and **John Stiegelmaier** recently joined the professional staff of Physics International Company, a research and development firm based in

San Leandro, Calif. Klein was formerly with the Aerospace Corp., and is interested in problems of stress waves in solids, electron beams, equation of state of earth media and hypersonic flow. Stiegelmaier is a senior physicist conducting research with high current electron accelerators.

The department of electrical engineering at Princeton University has appointed **Murray A. Lampert** as professor and **Peter Mark** as visiting lecturer in the program in solid-state-device physics. Lampert and Mark were formerly with the RCA Laboratories in Princeton.

**Robert Novick** has been elected a fellow of the Institute of Electrical and Electronics Engineers. This election is in recognition of his basic contributions to atomic and molecular physics. Novick is director of the Columbia University Radiation Laboratory.

#### ***Neugebauer to Deliver 1967 Henry Norris Russell Lecture***

Otto Neugebauer, Brown University, Providence, R. I., has been invited by the American Astronomical Society to deliver the Henry Norris Russell lecture for 1967. This invitation is in recognition of his discoveries of the astronomical contributions of the Near Eastern civilizations, particularly the Babylonian and Egyptian. The usual time for delivering this lecture is the summer meeting of the AAS; this will be held in mid-June at Yerkes Observatory, Williams Bay, Wis.

#### ***Robert Henry Dicke Receives Rumford Premium in Boston***

The Rumford Premium of the American Academy of Arts and Sciences was awarded 8 Feb. to Robert H. Dicke of Princeton. The prize consists of two medals, one of silver and one of gold, together with \$5000. Dicke was awarded the premium for his contribution to microwave radiometry and the understanding of atomic radiation. Most recently Dicke has been concerned with relativity, gravitation and cosmology. He has raised questions about the validity of Einstein's general theory of relativity (PHYSICS TODAY this issue, page 63).

#### **J. Robert Oppenheimer— Scientist, Public Servant**

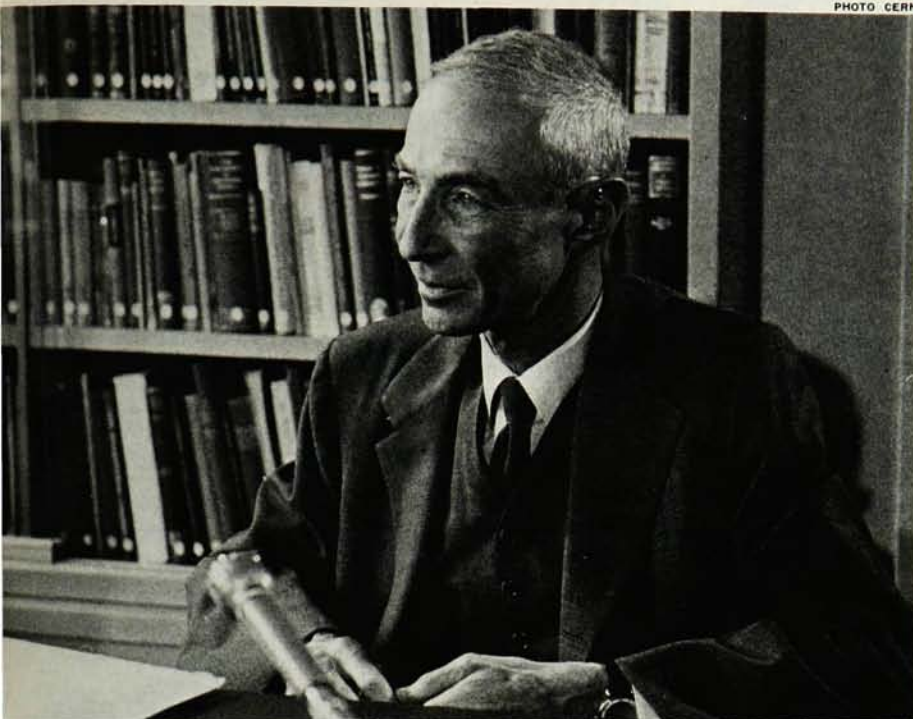
J. Robert Oppenheimer was born in New York City 22 April 1904, and died at Princeton 18 February 1967. He studied at Harvard and Cambridge and received his PhD degree at Göttingen in 1927, working under Max Born. Subsequently he held research fellowships at Harvard, Pasadena, Leyden and Zurich and took his first teaching position, a joint appointment between the University of California in Berkeley and the California Institute of Technology, in 1929. He became a full professor at both institutions in 1936. Robert Oppenheimer married Katherine Harrison in 1940 and is survived by her and their children, Peter and Katherine.

Starting in the autumn of 1941 Oppenheimer became involved in the American effort to produce atomic weapons and took charge of the work on the bomb itself the following year. He organized the Los Alamos laboratory, which designed and produced the first weapons, and was director of this laboratory from its inception early in 1943 until October 1945. Following World War II he was instrumental in the preparation of legislation for the Atomic Energy Act of 1946 and in the development of the Baruch Plan for the international control of atomic energy. He served as chairman of the General Advisory Committee of the Atomic Energy Commission from 1946 through 1952.

In 1947 Oppenheimer left Berkeley and Pasadena to become director of the Institute for Advanced Study at Princeton, a position which he held until 1966. He was elected to the National Academy of Sciences in 1941 and was also a fellow of the American Physical Society (which he served as president in 1948), the American Philosophical Society, the American Academy of Arts and Sciences and a foreign member of the Brazilian, Japanese and Royal Danish Academies of Science.

Oppenheimer's contributions to society derive from three principal roles that overlap to a considerable degree: creative scientist, public servant, and teacher. His research in theoretical





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physics covered an extraordinary range of fields. With Born, he wrote the fundamental paper on the quantum mechanics of molecules (1927); the method developed in this paper also proved useful in other situations in which particles of disparate masses interact with each other. Oppenheimer was the first to recognize (1928) the importance of particle exchange in scattering processes, and to show how to take it into account. He was also the first to realize (1930) that the unfilled, negative-energy, electron states could not correspond to protons as originally suggested by Dirac. With P. Ehrenfest, Oppenheimer showed in 1931 how the statistics obeyed by nuclei could be determined from the statistics of their constituents; this result provided strong evidence against the existence of electrons within nuclei a year before the discovery of the neutron. The first detailed account of the multiplicative showers produced by cosmic radiation was given by Oppenheimer and John F. Carlson in 1937. The treatment of general relativistic effects in the gravitational collapse of very massive stars by Oppenheimer and H. Snyder in 1939 stood for many years as the only exact study of this fundamental problem of astrophysics. The role of the

neutral pi meson in the origin of soft cosmic rays showers was suggested first by Oppenheimer in 1947.

Only a small fraction of Oppenheimer's many papers have been mentioned. Although of comparable importance, his participation in the work of many students and colleagues and the inspiration he provided through informal discussions and at scientific conferences are recorded only in acknowledgements scattered throughout the physics literature of the last 35 years.

Oppenheimer's enormous contributions to the security of his country during World War II, summarized above, were recognized by the award of the Medal of Merit in 1946. Withdrawal of his clearance in 1954, attended by much publicity, was a shattering experience not only for him but also for the many physicists who knew and respected him as a scientist and as a man. The subsequent presentation of the Enrico Fermi Award to Oppenheimer by President Johnson in late 1963 was widely interpreted as recognition that a great wrong had been done. The citation accompanying the award specifically mentioned Oppenheimer's post-war achievements, stating that the presentation was "in recognition of his outstanding contribu-

tions to theoretical physics and his scientific and administrative leadership not only in the development of the atomic bomb but also in establishing the groundwork for the many peaceful applications of atomic energy."

As a teacher of theoretical physics, Oppenheimer created two great schools, at Berkeley and Pasadena in the 1930's and at Princeton during the last two decades. California of 30 years ago was Mecca for theoretical physicists for two main reasons. First, Oppenheimer combined an extraordinarily vivid personality with an extremely wide range of interests in theoretical physics: all aspects of quantum theory, electrodynamics, nuclear structure and reactions, the then newly discovered mesons, cosmic rays, general relativity and cosmology, and statistical mechanics. A student or junior colleague could, with sufficient time and energy, learn all of the frontier physics of the time. Second, Oppenheimer always believed that physics is an experimental science and maintained intimate contact with the research groups headed by Ernest O. Lawrence at Berkeley, and by Charles C. Lauritsen and Carl D. Anderson at Pasadena. This close contact between theory and experiment, which is commonplace today, was most unusual—perhaps unique—30 years ago.

Oppenheimer's leadership at Princeton is well summarized in the introduction to his sixtieth birthday "Festschrift", the April 1964 issue of the *Rev. Mod. Phys.*: "After 1947 when he moved to Princeton, Oppenheimer created and guided the development of a new center of theoretical physics at the Institute for Advanced Study. Over the years it has provided a congenial meeting ground and a stimulating atmosphere for hundreds of physicists from all over the world. It has recently been flattered by widespread imitation. Oppenheimer's foresight gave the impetus to establish this group, and his constant interaction with its activities keeps his interest in physics always fresh."

This continuing interaction with physics will be sorely missed by past and present colleagues throughout the world.

Leonard I. Schiff  
Stanford University □