References and Notes

1. Publication authorized by the director, U.S. Geological Survey.
2. H. E. Suess, *Science* 120, 5 (1954).
3. ———, *ibid.* 120, 467 (1954).
4. M. Rubin and H. E. Suess, *ibid.* 121, 481 (1955).
5. ———, *ibid.* 123, 442 (1956).
6. H. Craig, *Tellus* 9, 1 (1957); R. Revelle and H. E. Suess, 9, 18 (1957).
7. H. E. Wright, Jr., and M. Rubin, *Science* 124, 625 (1956).
8. J. H. Feth and M. Rubin, "Radiocarbon dating of wave-formed tufas from the Bonneville Basin," paper presented at the Geol. Soc. of America, Cordilleran sec. meeting, Los Angeles, Calif., 20 April 1957.
9. H. Craig, *Geochim. et Cosmochim. Acta* 3, 53 (1953).
10. R. P. Goldthwait, *Ohio J. Sci.*, in press.
11. J. L. Forsyth and A. La Rocque, *Bull. Geol. Soc. Am.* 67, 1696 (1956).
12. W. J. Wayne and W. D. Thornbury, *Guidebook,* 5th biennial Pleistocene Field Conf., Indiana-Ohio, stop No. 14, September 1955.
13. L. Horberg, *Illinois State Geol. Survey, Rept. Invest.* 165, No. 22 (1953), p. 48.
14. F. C. Baker, *Univ. of Ill. Bull. No. 17* (1920).
15. W. S. Cooper and H. Foot, *Ecology* 13, 63 (1932).
16. J. D. Love, *Guidebook; 11th Ann. Field Conference,* Wyoming Geol. Assoc. (1956).
17. T. N. V. Karlstrom, *Bull. Geol. Soc. Am.* 66, 1581 (1955).
18. ———, *U.S. Geol. Survey Bull. No. 1021-J* (1956).
19. F. S. MacNeil, J. B Mertie, Jr., H. A. Pilsbury, *J. Paleontol.* 17, 69 (1943).
20. D. M. Hopkins, *Proc. 20th Intern. Geol. Congr.*, in press.
21. W. S. Broecker, J. L. Kulp, C. S. Tucek, *Science* 124, 156 (1956).
22. D. R. Nichols, *U.S. Geol. Survey Open File Report* (1956).
23. R. S. Tarr and L. Martin, *Alaskan Glacier Studies* (1914).
24. C. J. Huesser, *Am. J. Sci.* 252, 106 (1954).
25. H. A. Lee, *Can. Dept. Mines and Tech. Surveys, Geol. Survey Paper 55-15* (1955).
26. L. Moret, *Trav. lab. géol. fac. sci. univ. Grenoble* 32, 11 (1954–55) (1956).
27. S. W. Carey, *Australian J. Sci.* 17, 176 (1955).
28. E. Dobrovolny, *U.S. Geol. Survey Open File Report* (1955).
29. W. F. Libby, *Radiocarbon Dating* (Univ. of Chicago Press, Chicago, Ill., ed. 2, 1955), p. 116.
30. F. C. Baker, *Univ. of Illinois Bull. No. 17* (1920), p. 274.
31. H. Craig, *J. Geol.* 62, 115 (1954).
32. H. Suess, *Science* 122, 415 (1955).
33. G. D. Marler, *Am. J. Sci.* 254, 615 (1956).
34. G. W. Van Beek, *Bull. Am. Schools of Oriental Research* 6 (1956).

Karl Lark-Horovitz, Physicist and Teacher

The death of Karl Lark-Horovitz, on 14 April 1958, brought an end to an active and creative career devoted to the advancement of teaching and research in physics.

He was born on 20 July 1892, in Vienna, where he received his entire formal education. His studies at the University of Vienna, chiefly in the field of chemistry, were interrupted by a period of service in the Austrian army during World War I. He received his doctorate in physics in 1919, and taught at the University of Vienna until 1925. His early publications, some of which preceded his doctoral thesis, ranged over the subjects of radioactivity, relativity, the electromotive force of dielectrics, and visual space perceptions by the human eye. This wide field of scientific interest had its counterpart in a breadth of interest in other intellectual areas; for instance, his minor for the Ph.D. was on the ideas of pre-Socratic philosophers. It was further reflected in his later interests and achievements in science, which ranged from the physics of the solid state to biophysics, from x-rays to nuclear investigations, and from the physical investigation of the qualities of good violins to practical considerations on the production of glass.

In 1925 he was awarded an International Research Council fellowship, which brought him first to the University of Toronto, then successively to the University of Chicago, the Rockefeller Institute for Medical Research, and Stanford University. He delivered several lectures at Purdue University in the spring of 1928, and was invited to join the staff as professor of physics. He was appointed director of the Physical Laboratory in 1929, and head of the department in 1932; he held these positions until his death.

From the time of his arrival at Purdue, Dr. Lark-Horovitz played an active role in the reorganization and the teaching of undergraduate courses. He integrated ideas from chemistry, biology, and philosophy into the program of the general physics courses. He organized his material to emphasize the growth of the science of physics as one aspect of the history of civilization and to show the effect of scientific discovery on the social and economic development of society. The courses he taught to the science and nonscience majors in the early 1930's had many of the qualities of modern general education courses. The revisions and innovations he made in the physics courses for engineers also served to attract some of the ablest students to the field of physics.

At the beginning, he also carried a major fraction of the teaching load of the graduate program, as well as the entire burden of the direction of research. He began to develop a program of research in x-rays and the physics of surfaces with a tiny budget and improvised equipment. The success of this work soon led to increased financial support of research in physics. By 1936, elaborate equipment, such as the cyclotron, began to be acquired by a combination of purchase and of construction by the talented and enthusiastic group of graduate students that Dr. Lark-Horovitz had trained. His many graduate students would agree that he was an exacting taskmaster, but one who was extremely fertile in ideas, who had an exceptional familiarity with the pertinent literature, and who succeeded in communicating some of his own vigor and enthusiasm to them.

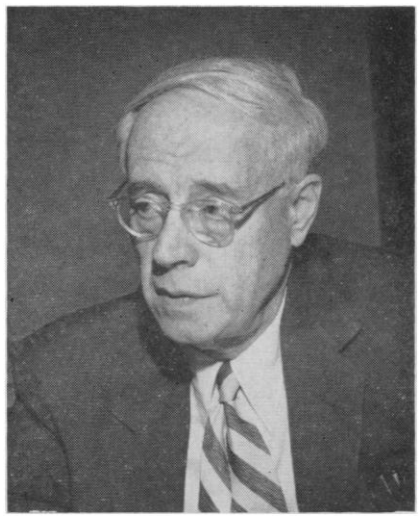
From 1936 to 1942 the research interests of Dr. Lark-Horovitz were concentrated in the field of nuclear physics. He made attempts to observe neutron diffraction with sources which, it is known now, had inadequate intensity. He began programs of work on nuclear reactions and investigated the fission of the uranium nucleus. He undertook investigations of cosmic rays with photographic plates sent up by balloon, and investigated biophysical problems by using radioactive tracers. His research interests were always up-to-date.

In 1942 he brought to Purdue a defense contract that turned his interest finally in the direction of solid-state physics. The contract was concerned with the development of crystal rectifiers, and his experience as a chemist led him to the wise choice of germanium as a material for investigation. He, and the group that he gathered around him, made rapid progress in the purification of this material, and applied new methods to the analysis of its behavior. Some

of the devices developed by this group were of great and lasting value. In addition, his work provided a foundation for the later development of the transistor at other laboratories.

After the end of the war his interests turned largely toward a study of the fundamental properties of semiconductors, as disclosed by systematic measurements of a great variety of their properties under a wide range of conditions. A major contribution from this period was his opening up of the field of study of semiconductors bombarded by energetic particles, which has thrown much light on the production and effects of lattice defects in crystals. Throughout this development, Dr. Lark-Horovitz' wide-ranging interests and knowledge of physics made him an effective catalyst and coordinator of the group working around him.

Worthy of special mention in this place are the contributions of Professor Lark-Horovitz to the work of the AAAS. He was general secretary from 1947 to 1949 and a member of the AAAS Editorial Board from 1949 to the time of



his death. His colleagues testify to the great energy that he brought to this work and to the high value of his contributions. He was an original member of the AAAS Cooperative Committee on the Teaching of Science and Mathematics, and chairman of the committee from 1945 to 1950. His activities on behalf of this committee were indicative of his strong interest in the teaching of science at all levels, from kindergarten to graduate school. He was influential in the preparation of numerous reports, such as "The preparation of high school science teachers" and "Manpower for research," a report to the President of the United States by the President's Scientific Research Board. His work had direct effect in producing an improvement in the requirements for the certification of science teachers in his home state of Indiana. He received from the American Association of Physics Teachers a Distinguished Service Citation for exceptional contributions to the teaching of physics.

In recent years the work of Dr. Lark-Horovitz was hampered by continuous ill health, but he never surrendered to his difficulties. His death came as he wished it, while he was engaged in an active program of work in a wide range of fields. He will be greatly missed by his many friends and associates.

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News of Science

Strauss Retires

Lewis L. Strauss retires on 30 June as chairman of the Atomic Energy Commission after 5 years as the principal director of the atomic energy program. However, Strauss will remain in the Administration as special assistant to President Eisenhower in the President's atoms-for-peace program. The disagreement between Strauss and some members of the Joint Congressional Committee on Atomic Energy is said to have strongly influenced Strauss in his decision to retire.

One of the principal objections to Strauss has been that for the last 5 years he has also been special adviser to the President on atomic energy, and thereby has been able to circumvent the commission in influencing the Administration's atomic policy. An editorial in the 6 June *Christian Science Monitor* said:

"Retirement of Admiral Strauss as chairman of the Atomic Energy Commission marks the end of an era. For five years he had dominated American atomic policies.

"Not without controversy. His emphasis on secrecy brought him into sharp conflict with the press, and influential members of Congress often differed with him vigorously on major policies. The AEC was sometimes divided. But, serving also as special adviser to the President and being a man of ability and tenacious purpose, Mr. Strauss very generally prevailed.

"No one questioned his patriotic dedication. But much opinion had developed both among technical experts and in Congress holding that less rigid attitudes would also serve national security. His opposition to a ban on bomb tests had recently been by-passed in the naming of experts to talk with the Russians about policing a ban. Mr. Strauss had himself modified his earlier opposition to sharing atomic information. . . .

"Cooperation between the Joint Congressional Committee on Atomic Energy and the AEC is especially essential. We trust that in the period ahead new hopes for more flexibility and cooperation will be realized."

John A. McCone, a West Coast businessman and former Under Secretary of the Air Force, has been nominated to succeed Strauss on the AEC. McCone has been closely connected with West Coast shipbuilding and ship-operating interests and is president of Joshua Hendy Corporation in Los Angeles, a steamship operating concern. In announcing the nomination the White House did not say that McCone would succeed Strauss as chairman of the five-man commission. The President will not designate the new chairman until the Senate has acted on the nomination. A *New York Times* article on McCone commented that "The immediate reaction of Democrats on the Atomic Energy Committee was restrained but friendly, raising the possibility that the McCone nomination may restore some degree of harmony between the committee and the commission."