from the vocational to the graduate level. When the Applied Psychology Panel, NDRC, was organized in 1943, Wolfle's reputation had grown so far that he was enthusiastically chosen both as a member of the Panel and as a Technical Aide to the Chief. Until 1946 he served his country and science with great effectiveness in the administration of research projects in the field of selection and training and in liaison with various military commands, receiving at the end a Presidential Award of Merit. An OSRD report which he prepared on the use and design of synthetic trainers had a marked influence in the development of human engineering in the military services.

In 1946 Wolfle accepted the secretaryship of the American Psychological Association, which position he held for five years. During this period the APA membership exceeded 7000, and ten scientific journals were being published. It was Wolfle's task to handle the many administrative and financial details of this organization while directing the professional expansion of psychology and maintaining consultantship contacts with such organizations as the Research and Development Board, the Air Force Scientific Advisory Board, and the National Science Foundation.

Since 1950 he has been the Director of the Commission on Human Resources and Advanced Training appointed by the Conference Board of Associated Research Councils. The Commission has now in press a volume covering the supply, the probable future demand, and the potential supply of people qualified for work in science, engineering, the professions, and other high level fields. As the Commission's work comes to a close, Wolfle will shift gradually to full time with the AAAS.

The foregoing chronicle does not do complete justice to the new Administrative Secretary. It makes no mention of his excellent publications in the field of experimental and comparative psychology. It makes no mention of the fact that he is a devoted family man. His wife Helen M. Wolfle, also a doctor in psychology, is the author of some very important research publications and a woman of wide administrative experience in science. But especially the account fails, as any account must fail, to present the kindly, gentle but incisive personality of the 48-year-old scientist who is the new Administrative Secretary of the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. Only personal contacts will adequately reveal this side of the man. The membership can look forward confidently to his administration of its affairs.

Paul A. Scherer

Lee Anna Embrey

National Science Foundation, Washington, D.C.

INVENTOR, engineer, administrator, and gentleman farmer, Paul A. Scherer, executive officer of the Carnegie Institution of Washington, manages to crowd several careers into one busy work week.

He was born in Zanesville, Ohio, July 25, 1897, the son of James A. B. and Bessie Scherer. Like so many of his scientific colleagues, he is the son of a minister. His father, who was ordained at the age of eighteen, was pastor of a Lutheran church in Charleston, South Carolina, where Paul spent part of his childhood. Dr. Scherer was subsequently president of Newberry College in South Carolina and later of Throop College in California.

Young Scherer developed an early taste for physics and engineering and began his studies at the California Institute of Technology. His college career was

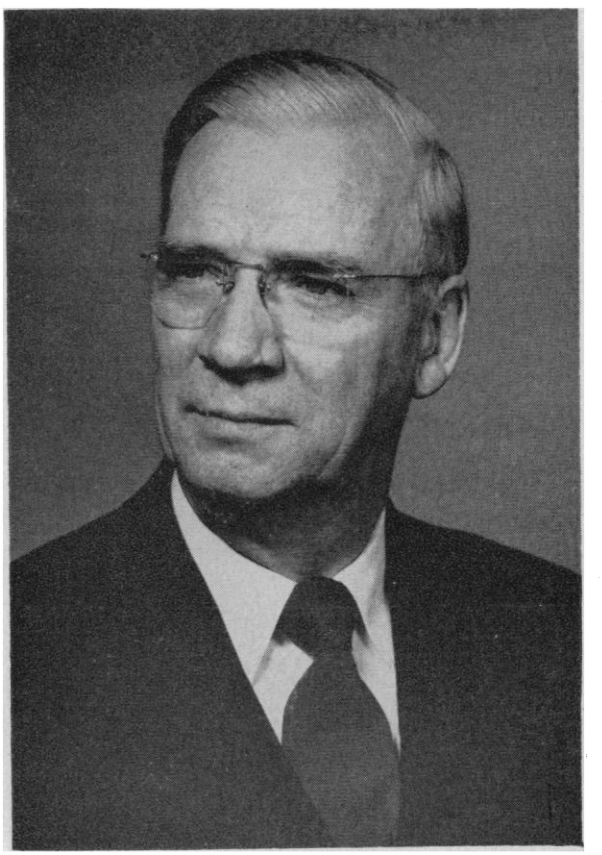
interrupted by World War I. In his zeal to see immediate military service, he attempted to enlist in the Canadian Army but was finally persuaded that he could be more useful in the American Navy. He enlisted as a seaman but his aptitude for naval life led to his being assigned to Annapolis to take the officers' short training course. In his preparation for a commission, he was able to continue his interest in engineering, and upon completion of the course, with an ensign's commission, he was assigned to sea duty as an engineer officer. He returned from the war with a rank of lieutenant senior grade.

His marriage to Margaret Hale on Christmas Day, 1918, brought together two distinguished American academic families. Miss Hale's father was the noted astronomer, Dr. George Ellery Hale, organizer, and for many years director of the Mount Wilson Observatory under the Carnegie Institution of Washington. Dr. Hale and Dr. Scherer met on shipboard enroute to Skibo, Scotland. Each hoped to interest the late Andrew Carnegie in giving funds to their respective institutions. Dr. Hale, keenly interested in Throop College, persuaded Paul Scherer's father to accept the presidency of the college, which later became the California Institute of Technology.

Upon the termination of Mr. Scherer's military service, the Scherers decided to move to Oregon and go into the fruit-growing business. This appears to have been one of those significant decisions that have so profound an effect upon later careers, because it was as a fruit grower that Mr. Scherer first became interested in refrigeration problems. Dissatisfied with the precooling devices in the pear-packing plants, he began to develop his own methods and equipment for more satisfactory refrigeration. Mr. Scherer holds a number of patents in the field of refrigeration. These interests later led him quite naturally into the field of air conditioning.

After several years of managing fruit companies in the Northwest, he became a consulting engineer in the field of heat transfer and refrigeration. Just before the outbreak of World War II he served as consultant in the design and construction of the Dallas plant of North American Aviation. In the early years of the war he was director of research for the AiResearch Manufacturing Company of Los Angeles, working on heat transfer problems for aircraft and developing equipment used on heavy bombers and fighters. At AiResearch he was also in charge of early production models of that company's all-aluminum Intercooler—a device that raises the critical altitude of American bomber and fighter planes by cooling the hot air from the supercharger before it reaches the motor.

About this time the National Defense Research Committee of the Office of Scientific Research and Development was looking for a man to head its new Engineering and Transition Office, an office which had been set up to transform successful research projects into production models suitable for service testing and mass production. Mr. Scherer was recommended as a man peculiarly qualified for this difficult and



vital task. To him belongs a substantial share of the credit for the speed with which the weapons and devices developed under the OSRD research program went into production and use.

After the close of the war, Mr. Scherer remained with the OSRD to assist in the multiple details associated with the termination of a Federal agency. At about this time the post of executive officer of the Carnegie Institution of Washington became vacant through the retirement of the late Walter M. Gilbert, and Mr. Scherer was a natural choice as his successor. The war years had fully demonstrated his talents and abilities to the director of the OSRD, Dr. Vannevar Bush, who was also president of the Carnegie Institution. They worked together especially well because of their common interest in engineering problems. Dr. Bush says of his principal staff officer:

> Blessed is the president of anything whatever who has with him a good executive officer. Really accomplished executive officers are far more rare than good presidents or good commanders. Theirs is a subtle art which few indeed grasp and fewer practice. Paul A. Scherer is the best practitioner of the art I have ever encountered.

As executive officer of C.I.W., Mr. Scherer is responsible for many details of a scientific activity whose influence is world-wide in scope. The Institu-

tion maintains seven research departments: the Mount Wilson and Palomar Observatories (in collaboration with the California Institute of Technology), the Geophysical Laboratory, the Department of Terrestrial Magnetism, Department of Plant Biology, Department of Embryology, Department of Genetics, and the Department of Archaeology.

Mr. Scherer takes the load off the president in the administration of this widespread operation and in addition shares many of Dr. Bush's scientific and inventive enterprises. At present he spends some of his time on the chilly waters of Chesapeake Bay experimenting with the hydrofoil craft that Dr. Bush and he have developed.

A hydrofoil craft is one that operates on foils or wings submerged below the surface of the water. The hull is attached to the foils by struts and rides above the surface of the water unaffected by wave action. Such a craft has many advantages, including greater stability and speed than conventional displacement craft, and a high degree of invulnerability to mines and torpedoes. Hydrofoil craft with surface-piercing hydrofoils are old—Alexander Graham Bell built a good one about 1920. But stable submerged hydrofoil craft are new. Dr. Bush and Mr. Scherer have made a number of inventions in the hydrofoil field, particularly with respect to stability and control, problems which in the past have limited the development of hydrofoil craft.

The Scherers make their home at Marietta, one of Maryland's famous old colonial homes, built around 1780 by Gabriel Duval, Associate Justice of the Supreme Court. It is thrown open to the public once a year, as part of Maryland's annual garden tour.

The Scherers have six daughters and twelve grandchildren.

News and Notes

Conference on the Validation of Scientific Theories, Boston, Dec. 27-30

DESPITE the immense technological successes of science in our time, there has been a widespread dissatisfaction. One has accused modern science for its emphasis on the material aspect of the world and for diverting the mind of modern man from human and spiritual interests. The humanities have developed almost segregated from the sciences. Philosophy, the key to the humanities, has become an isolated department, without much bearing upon the mind of present-day scientists. By the present Conference, an attempt was made for some improvement of this unsatisfactory situation by discussing in a strictly scientific way possible bridges between the natural and the social sciences, between the sciences and the humanities. Such bridges cannot be built without some elements of a common language and without a minimum of common philosophy.

The Conference was sponsored by the American Academy of Arts and Sciences in Boston, the Institute for the Unity of Science, and the National Science Foundation. The program committee consisted of Ph. Frank (Harvard) as chairman, H. Feigl (Minnesota), G. Holton (Harvard), H. Margenau (Yale), R. K. Merton (Columbia), R. J. Seeger (National Science Foundation), and R. H. Shryock (Johns Hopkins). The committee chose as the central problem of the Conference the "Reasons for the acceptance of scientific theories" because, in the solution of this problem, not only results of purely scientific research are involved, but equally considerations from the fields of social studies and the humanities, particularly from the philosophy of science.

In Symposium A (a joint session with AAAS Section L and the Philosophy of Science Association; R. J. Seeger, chairman) this central problem was formulated and the variety of its solutions outlined. *Ph. Frank* stressed the point that in the physical sciences a general theory, as the theory of relativity, is not accepted on the ground of mere agreement of its results with observed facts. The theory should also be "simple," in agreement with common sense, with prevailing philosophies and should allow an interpretation of the universe that can be used to support a "desirable" way of life. Since none of these requests can be completely met by a theory, the actual acceptance has always been the effect of a compromise. *W. Churchman* (Case Institute of Technology) showed by a logically elaborate argument that "inductive inference," the derivation of general theories from observed facts, includes always decisions that are not essentially different from "moral" decisions. *B. Moore* (Harvard) exemplified the role of a "desirable" way of life as a motive for the acceptance of theories by describing the effects of government action in the Soviet Union upon the presentation of scientific theories in writing and teaching. In the discussion, *E. Nagel* (Columbia), *E. C. Kemble* (Harvard), and *R. Rudner* (Tufts) elaborated on the logical and sociological aspect of theories.

Symposium B (*H. Margenau,* chairman) was devoted to the requirement that every theory should have an "operational meaning." *G. Bergmann* (Iowa) and *C. Hempel* (Yale) presented blueprints for a logical analysis of this concept. *R. B. Lindsay* (Brown) pointed out that theories that are actually used by the physicist contain some terms without operational meaning and asked *P. W. Bridgman* (Harvard) to comment on this fact. In the discussion, Bridgman described his personal part in the fight for "operational analysis;" it is necessary that a theory as a whole have operational meaning, but this is not necessary for each single term. *R. J. Seeger* and *S. S. Stevens* (Harvard) directed attention to some points in the