

AWARDS

Nobel Physics and Chemistry Prizes

The 1960 Nobel Prize in physics has been awarded to Donald A. Glaser of the University of California at Berkeley for his invention of the bubble chamber for the observation of the tracks of subatomic particles. A native of Cleveland, Glaser did his undergraduate work at Case Institute of Technology and received his PhD in physics in 1950 at the California Institute of Technology, where he had worked on high-energy cosmic rays under Carl D. Anderson. He then joined the University of Michigan and in 1952, at the age of twenty-five, he began the series of tests which led to the first successful demonstration of the idea of the bubble chamber—a sealed chamber containing a superheated liquid in which boiling is initiated by ionizing radiation.

His original idea was based on the observation that boiling will commence in a superheated liquid if a foreign object (such as a splinter of glass) is introduced to serve as a point of concentration for the vapor. Glaser reasoned that the charged ions produced by the passage of a charged particle might produce a similar effect, and that the mutual repulsion of ions having the same charge might give rise to cavities or bubbles in the liquid. For this effect to occur, the liquid would have to be nonconducting so that the ions would not lose their charge, and it would have to have low surface tension and high vapor pressure so that the bubbles would not collapse before being observed. He used liquid ether in the first series of tests and found that the bubble effect did occur and that the tracks could be photographed. After proving the feasibility of the idea in his work at the University of Michigan's "Phoenix Project", Glaser built an improved chamber with liquid propane and tested it at the Brookhaven National Laboratory, where in the first ten minutes of operation he obtained photographs of nuclear events seldom seen in their entirety by other detection methods. The bubble chamber has proved to be especially useful in recording the tracks of high-energy particles and has thus become an essential part of the research equipment used in association with high-energy particle accelerators. It has been estimated that some \$35 million is being spent annually on bubble-chamber research and development.

Another West Coast scientist, Willard F. Libby of the University of California at Los Angeles, won the 1960 Nobel Prize in chemistry for his discovery and development of the radioactive carbon dating method which has proved to be of immense value in archaeological circles during the past several years. A former Atomic Energy Commission member, Dr. Libby first proposed the idea of radiocarbon dating about fourteen



D. A. Glaser, Nobel Laureate in Physics.

years ago while serving as professor of chemistry at the University of Chicago's Institute of Nuclear Research. His discovery is based on the fact that the radioactive isotope carbon-14, whose half life is approximately 5600 years, is present in minute quantities in the tissues of living plants and animals. Because carbon-14 is continually produced in the atmosphere, and because living organisms continually absorb the compounds formed with it, an equilibrium concentration is maintained in living tissue. When the organism dies the radiocarbon content is no longer replenished and drops below the normal equilibrium concentration as the isotope decays by beta-emission into nitrogen-14. By measuring the radiation from specimens of organic matter of archaeological interest, it is possible to estimate the age of the sample, but since the radiation levels to be measured are very low compared to normal background radiation, Libby had to develop a heavily shielded detecting apparatus in which the specimen itself becomes part of the counter wall.

Drs. Glaser and Libby are the 73rd and 74th Americans to win Nobel Prizes. The awards, each of which amounts to \$43 627 this year, were presented in December at the traditional ceremony in Stockholm. Recipients are selected by the Swedish Academy of Sciences.

Magnetism Conference Honors Bozorth

The Sixth Conference on Magnetism and Magnetic Materials, which was held November 14-17 in New York City, paid special tribute to Richard M. Bozorth of Bell Telephone Laboratories for his outstanding role in the founding of the Conference. The surprise ceremony was held November 16 at the Conference banquet. C. Lester Hogan of the Motorola Company, general chairman of the Conference, acted as banquet toastmaster and introduced J. H. Van Vleck of Harvard University, who presented the citation and