SOLMITZ

toral work at the Chicago synchrocyclotron with Enrico Fermi, John and Leona Marshall and Arthur Rosenfeld. During this time, his most successful and enduring contribution to particle physics was his application, encouraged by Fermi, of the maximum-likelihood method to the analysis of cyclotron experiments. This powerful method eventually spread throughout experimental particle physics.

In 1956 Solmitz joined the bubble-chamber group in Berkeley that Alvarez had formed a year earlier. The tiny group had started planning the analysis of bubble chamber pictures using computers and track-following projection microscopes. At the time this seemed like a formidable undertaking; Berkeley's first digital computer, an IBM 650, had just been ordered, and the first bubble-chamber-film measuring machine was still being designed.

An immensely productive era began. After developing prototype chambers 2 and 4 inches in diameter, the group started experiments at the bevatron with 10- and 15-inch models. Later, a 72-inch chamber was built; it was subsequently modified to 80 inches and moved to SLAC. Successive generations of "Frankenstein" measuring machines were put to work. Concurrently, Solmitz and his colleagues (Horace Taft, James Snyder, J. Peter Berge) produced the sequence of computer programs PANG, KICK, SUMX that turned out to be capable of keeping up with the flood of events and that were adapted to other computer systems at high-energy physics laboratories throughout the world. It was an exciting period of successful experiments interwoven with the design of improved apparatus and better programs.

Interestingly, although the goal was the 72-inch chamber, about half of the dozens of mesons and baryons discovered by the group were found and classified using the 15-inch chamber. Alvarez has frequently expressed surprise that although the chambers were designed to study the "strange particles," with lifetimes of about 10^{-10} seconds, their major discoveries were of a set of particles with lifetimes of about 10^{-21} seconds—made possible by the data analysis programs devised by Solmitz and his associates. As visitors came to work at Berkeley and learn the new techniques of bubble-chamber physics, Solmitz's programs and reputation quickly spread around the world.

Throughout bubble-chamber physics, whether it was the discovery and correct classification of the quantum numbers of the eta meson with only 29 events, or the study of broad resonances with thousands of events, statistical analysis and the maximum-likelihood method became crucial tools, and Solmitz became a master of these tools. When Alvarez received the Nobel Prize in 1968 for the discovery of many particles and for data analysis, he gave major credit to Solmitz's contributions.

Solmitz spent sabbaticals at CERN, Paris, and MIT, where he worked with Irwin Pless on the development of PEPR, a pioneering step in the automatic following and measuring of track images.

In 1970, when Alvarez stepped down as group leader, the unanimous choice for his successor was Solmitz, who served as the first of a series of rotating chairmen of "Group A" at Lawrence Berkeley Laboratory.

Solmitz pursued a distinguished career for the next five years. Then, one night in 1975, while walking home down the hill from the laboratory, he was hit by a bicyclist. He was never able to work again, and died five years later.

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Kurt Mendelssohn

Kurt Mendelssohn, Reader emeritus in the University of Oxford, and Fellow emeritus of Wolfson College, died after a long illness on 18 September 1980 at the age of 74. He was a physicist of world repute whose research covered many areas of solid state and low-temperature physics. The impact of his work was greatest on superconductivity and superfluidity, both spectacular manifestations of the transition of an assembly of particles into an ordered state at very low temperatures.

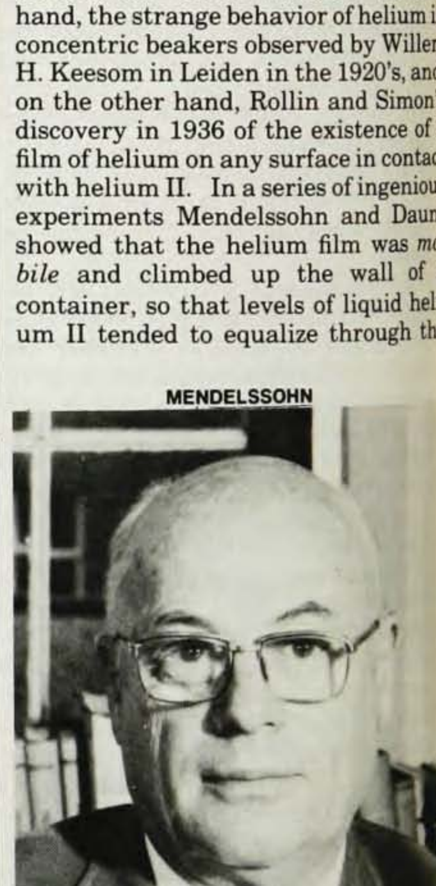
Born in Berlin on 7 January 1906, Mendelssohn studied at the University of Berlin and took his doctorate in 1930, working in the research group of his cousin, F. E. (later Sir Francis) Simon. His thesis foreshadowed many of his future interests, such as the properties of metals and alloys at low temperatures, superconductivity and low-temperature techniques.

In 1933, soon after the Nazi takeover, at the invitation of Professor F. A. Lindemann (later Lord Cherwell), Mendelssohn came to the Clarendon Laboratory, Oxford, where, a few months earlier, he had set up a small single-expansion helium liquefier and thus, in January 1933, became the first to liquefy helium in Britain.

From 1933 until his retirement in 1973 Mendelssohn worked in the Clarendon Laboratory, where he directed an independent research group whose achievements contributed greatly to the establishment of the reputation of the Clarendon as an important center for low-temperature and solid state physics research.

Mendelssohn's most spectacular discovery was made in 1938, when, in collaboration with J. G. Daunt, he solved the puzzle of two previously unrelated phenomena found in the superfluid modification of liquid helium (helium II). These were, on the one hand, the strange behavior of helium in concentric beakers observed by Willem H. Keesom in Leiden in the 1920's, and, on the other hand, Rollin and Simon's discovery in 1936 of the existence of a film of helium on any surface in contact with helium II. In a series of ingenious experiments Mendelssohn and Daunt showed that the helium film was *mobile* and climbed up the wall of a container, so that levels of liquid helium II tended to equalize through the

MENDELSSOHN



transfer of liquid along the wall and over the rim. This frictionless film flow was an exact analog of the current in a superconductor; it offered a powerful technique for studying superfluidity that was used extensively by Mendelssohn and his coworkers. In particular, the fact that the relation between film velocity and film thickness was governed by the Heisenberg uncertainty principle showed that the film phenomenon was a quantum effect on a macroscopic scale.

In further experiments carried out mainly in the 1950's Mendelssohn and his colleagues showed that the superfluid component of the helium film had zero entropy, which led to what Mendelssohn regarded as his most important experiment in superconductivity: He proved that the Thomson heat in a lead ring carrying a persistent current was zero, from which he concluded that the entropy of the superconducting electrons was also zero.

The development in the 1960's of technologically important high-field superconductors owed much to pioneering work Mendelssohn carried out on superconducting alloys in the 1930's. Then, with his studies of the thermal conductivity of superconductors, he established an effective method for determining lattice imperfections in solids.

He foresaw the growing importance of cryogenics in technology and industry and in 1960 founded the journal *Cryogenics* and in 1966 the biennial Cryogenic Engineering Conferences. He put his gift for lucid and lively exposition to good use in the two monographs *Cryophysics* and *The Quest for Absolute Zero.*

His interests and his knowledge reached far outside his field of specialization. In his book *The World of Walter Nernst* he gave a masterly description of the dramatic rise of German science, technology and industry at the turn of the century, while in *The Riddle of the Pyramids* he put forward novel ideas about the sociological and engineering aspects of the building of those monuments. During the 1960's, having paid several visits to the People's Republic of China, he described his experiences and his views in the book *China Now* richly illustrated with his own photographs.

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John Hubbard

The physics community lost one of its most brillant and original scientists on 27 November when John Hubbard, 49, died after a brief illness. Hubbard was an internationally renowned physicist, who in a distinguished 25-year research