BRODE

ton University in 1926–27.

Brode was appointed assistant professor of physics at the University of California at Berkeley in 1927, and rose to the rank of full professor in 1932—the fastest advance in the history of the department of physics. His initial research work was in atomic physics but he soon shifted to cosmic-ray investigations similar to those then under way in European laboratories, particularly those of Louis Leprince-Ringuet and Pierre Auger in Paris.

Brode spent 1934–35 as a Guggenheim Fellow at Cambridge University and the University of London. On his return he worked with Ernest Lawrence, J. Robert Oppenheimer, Robert Birge and other members of the Berkeley faculty in developing a world-quality physics department.

Shortly after the beginning of World War II, Brode was asked to direct the work, conducted at what is now Johns Hopkins Applied Physics Laboratory, that led to the proximity fuse.

In 1943 Oppenheimer asked him to join the Manhattan Project as one of the senior group leaders. Brode's work on the atom bomb, only recently declassified, involved applying his proximity-fuse work to meet the extremely high reliability requirements of the atomic bomb.

Returning to Berkeley in 1946, Brode resumed his teaching and research. In particular, he investigated the intensity and masses of cosmic-ray particles using a large cloud chamber in a magnetic field. He also used cloud chambers in a magnetic field in a B-29 aircraft to observe cosmic rays at an altitude of 30 000 feet. He became involved in administrative work as well, and as a member of the academic senate's budget committee for several years, he assisted in moving Berkeley into the first rank of American universities. He was a Fulbright Fellow in Manchester, England, in 1951–52.

Brode was acting director of Berkeley's Space Sciences Laboratory in 1964–65 and thereafter spent two years in London as the director of the university's education-abroad program in the United Kingdom. He retired in 1967 but continued as an academic adviser on the university's system-wide staff.

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Shirley Leon Quimby

Shirley Leon Quimby died on 15 May 1986 at the age of 93. Quimby taught physics at Columbia University from 1919 to 1962, when he retired and became professor emeritus. He was treasurer of The American Physical Society from 1957 to 1970, and APS treasurer emeritus since 1970. When Quimby took over as treasurer the society had one employee, and there was no satisfactory bookkeeping or accounting system. Quimby effected the transition from a back-of-the-envelope operation to a reasonably conventional system more befitting the growth in size and membership that has occurred since World War II.

Quimby was born 21 August 1893 in San Francisco. He studied philosophy as an undergraduate at the University of California at Berkeley, after which he served in the US Navy during World War I. Assigned to the New London base, Quimby impressed Albert Wills, who was the officer in charge of research on antisubmarine devices. After the war Wills returned to his post as professor of physics at Columbia and convinced Quimby to become a graduate student there, where they worked together in solid-state physics. Quimby received a PhD in physics in 1925 and immediately joined the faculty at Columbia. During World War II he returned to the Navy, where he helped develop anti-magnetic-mine devices.

Quimby was an outstanding experimenter. He pioneered the use of quartz crystals to make precise measurements of elastic constants of solids. In his early work at Columbia Quimby developed the "composite oscillator," a device consisting of a piezoelectric quartz crystal serving as an ultrasonic driver cemented to a second crystal that was to be studied. He showed that from the resonant frequency of this oscillator one could obtain sound velocities and, therefore, elastic constants with high precision. At the same time, the damping of mechanical loss of the composite oscillator yielded the "internal friction" in the crystal of interest. Together with his students, Quimby used this method to study the elastic constants

and internal friction of a wide range of materials. Several papers dealt with magnetic phenomena, as well as internal friction due to crystal dislocations. Some of his later papers studied the ordering phenomenon in Cu_3Au in great detail. It is noteworthy that most of these "Quimby papers" did not carry his name. He interacted very closely with his students and was a meticulous experimenter, emphasizing excellence of equipment design and insisting on the highest possible precision of measurements. Nevertheless, he modestly insisted that students' thesis work be published under their own names. In those papers, the Quimby imprint was always a simple acknowledgment to him for "helpful counsel and encouragement."

Quimby's former research students will probably best remember him for having taught them the beauty of carrying out experimental physics with elegantly designed equipment operated so as to achieve the highest possible precision. Thus, no matter how the theoretical fashions might change, the results of such experiments will inevitably have lasting value.

Quimby had few peers when it came to delivering full, complete lectures on complex subjects. One of his students said: "His lectures came at you thick and fast. If you blinked, you were lost, but if you took good notes, it was all there and it was clear."

Quimby did extremely accurate measurments of properties such as rigidity, hardness and the velocity of sound in the solid state, and he trained a number of brilliant graduate students.

Several of Quimby's graduate students became important figures in the solid-state-physics community. One of his former students, Jerrold Zacharias, said that Quimby "regarded physics as an abstraction that could be rationalized and put to use."

Quimby was a member of the executive committee and governing board of the American Institute of Physics from 1961 to 1969. Because AIP does most of the publishing for its ten member societies (during Quimby's tenure there were five), and because publishing was and still is the principal financial operation of all the societies, Quimby was the watchdog of the physics community's finances during a time of great expansion. The physics community owes a great debt to his perspicacity in arranging for APS to accumulate the reserves to survive the financial crisis that occurred in the research community during the early 1970s.

Quimby's service to APS began long before he accepted the position of deputy treasurer in 1954. As chairman of the local committee for the annual meeting, which in the 1930s was held at Columbia University, Quimby was re-

sponsible for introducing the gadgetry that in those days coordinated invited sessions among the three large lecture rooms in the Pupin Physics Laboratory.

Quimby was known as an accomplished amateur magician, and he served as president of the parent organization of the Society of American Magicians. He was extremely proud of being the commodore of the New York Yacht Club. He and Harold W. Webb, then also a professor of physics at Columbia, were responsible for measuring the yachts that engaged in the New York Yacht Club races; Quimby invented the gadgets and the pantographs used for the task. Also, after his retirement from Columbia, he developed an interest in unraveling the complex calendar of the Maya Indian civilization and wrote an extensive tract on that subject.

Quimby's wife, the late Edith Hinkley Quimby, was an eminent radiologist and professor at Columbia's College of Physicians and Surgeons (PHYSICS TODAY, December 1982, page 71).

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Harry H. Hall

Harry H. Hall, Professor Emeritus of Physics and former department chairman at the University of New Hampshire, died suddenly on 23 October 1985. He joined New Hampshire in 1940 as an assistant professor after having taught at Harvard and Radcliffe. He worked vigorously to strengthen the graduate physics program and received the university's first Federally sponsored physics research grant in 1946. After retiring in 1969 he was active in his laboratory and provided generous and wise counsel to younger faculty and students alike until the day before his death.

Hall was born in Beirut, Lebanon. His father, William H. Hall, was the president of the Preparatory School and chaplain of the American University. Harry Hall attended the Preparatory School in Beirut, received a BS from Union College in 1926 and returned to Beirut to serve as an instructor of physics for 3 years. He then attended graduate school at Harvard, where he received his PhD in 1934. While there he lived with his older cousin Edwin H. Hall, who in 1879 had discovered the famous Hall effect in semiconductors. From 1937 to 1940 he worked for Western Electric as an engineer.

From 1941 to 1946 he served in the US Navy Reserve at the Navy Ordnance Laboratory, and was discharged with the rank of lieutenant commander. He received the prestigious Civilian Meritorious Service Award from the Navy in 1946 for his co-invention of a depth-charge detonator that was instrumental in the defeat of the German submarine forces in World War II.

He returned to the University of New Hampshire in 1946, rose to full professor in 1953 and served as chairman from 1956 to 1963. Under his leadership the department prospered and expanded to include a PhD program in 1961.

Hall's research in underwater sound included the construction of an impedance-matching device for a piezoelectric pressure transducer and the development of zone refining techniques for purifying tellurium. He made pressure transducers approximately $1/16$ inch in diameter with a frequency response up to 500 kHz. The older, larger transducers required several pounds of TNT to produce useful data in outdoor saltwater ponds but Hall's new small transducer could be safely used with extremely small charges in his 1500-gallon laboratory saltwater tank in the basement of the university's building.

Hall was also somewhat of a Renaissance man. He enjoyed music enormously, and sang in several amateur and semiprofessional choruses. He also enjoyed sailing in nearby Great Bay in his sturdy 13-foot "Merrimack," and he was commodore of the Great Bay Yacht Club. Finally, he was instrumental in organizing a group to help the Durham Day Care Center.

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Donald E. Olson

Donald E. Olson, professor of physics at the University of Minnesota in Duluth, died on 25 June 1985. He was 62 years old. Olson received his BS from the University of Wisconsin in Superior and his MS in physics at the University of Wisconsin in Madison. He taught at Superior and at local schools in Ironwood, Michigan, before joining the physics faculty of the University of Minnesota in 1954. Olson was renowned for developing "electric field mills" for measuring the electric field at the Earth's surface. These mills were in demand worldwide, and he spent much of his time installing them in remote parts of the globe. Olson was named a full professor at Minnesota in 1973; he served both as president and as vice-president of the Minnesota Area Association of Physics Teachers. □