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Joseph P. Remeika

Joe also developed the techniques to grow a wide variety of oxides of the corundum structure. These included many different crystals of aluminum oxide doped with magnetic impurities, which were used in the early studies of paramagnetic resonance and the Mössbauer effect. His crystals of doped vanadium oxide were used to establish the phase diagram for the Mott transition, and, most recently, a crystal of  $\text{Fe}_2\text{O}_3$  containing pure  $\text{Fe}^{57}$  was used to study nuclear Bragg scattering. His work on corundum also led to studies of solid electrolytes like sodium beta alumina. Some of his flux-grown ruby crystals had faces so parallel, smooth and free of strain that they could be used as lasers without any further preparation.

Joe made equally important contributions to superconductivity, starting with studies of tungsten bronzes and the discovery of the rare earth stanides (some of which are reentrant). In the field of oxide superconductors, his extensive study of the barium bismuth lead oxide system resulted in a detailed understanding of its basic physical and chemical properties. Even after Joe became ill, his team grew crystals of lanthanum copper oxide (for which they eventually learned to control the oxygen stoichiometry) and lanthanum strontium copper oxide, which were used in the early studies of antiferromagnetism and superconductivity.

During the course of a research program, Joe would often have a dozen different collaborators, each making a different type of measurement. In these collaborations Joe was unfailingly helpful, generous in sharing his knowledge, and scrupulously fair in the assignment of credit even in the most competitive of situations.

Joe constantly stressed the need to use pure, well characterized crystals, and chided his colleagues when they made sophisticated measurements on unevaluated materials. It is this emphasis on pure crystals that Joe has left us as his legacy.

In all of his interactions, Joe was always a gentleman. With his infectious optimism and his quiet, gentle manner, he deeply touched those with whom he worked. He will be sorely missed by his colleagues at Bell Labs and throughout the world.

DENIS B. McWHAN  
JOSEPH F. DILLON JR  
BERTRAM BATLOGG  
AT&T Bell Laboratories  
Murray Hill, New Jersey

## S. Howard Bartley

S. Howard Bartley, one of the country's leading experts on human vision, a noted author and researcher, and a distinguished professor in the psychology department at Memphis State University, died on 1 June 1988 at his home in Memphis. He was 86.

Bartley was well-known in optometric circles. He taught in universities for 64 years, wrote eight textbooks on vision, fatigue and perception, and has had more than 400 articles published in scientific journals.

Bartley received his bachelor's degree in 1923 from Greenville College in Illinois, his master's degree from the University of Kansas in 1928, and his PhD from Kansas in 1931. In the 1930s he investigated the neurophysiology of the eye and optic pathway, working at the Washington University School of Medicine in St. Louis. After 11 years there, he went to the Eye Institute at Dartmouth College to direct research on visual fatigue and the capabilities of night vision for the Navy. Bartley later joined the faculty at Michigan State University, and in 1971 he moved to Memphis State, where he was active until the onset of his illness.

Bartley's main areas of interest were human sensory processes and perception (particularly as manifested in vision), fatigue, and systematic psychology.

It is to be expected that a visual scientist should acquire an interest in art, and Howard was a talented painter who left behind many beautiful pictures. I share with Howard's family the wonderful joy of having known Howard and basked in his friendship and loyal support.

GLENN A. FRY  
The Ohio State University  
Columbus, Ohio ■



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