always well prepared and skillfully presented and his office door was always open to students who needed help, advice, or just wanted to chat. Many administrative duties evolved upon him because of his natural ability to work things out to everyone's satisfaction. He possessed a talent for recognizing the potential of the new young physicists at the Laboratory, and several of the staff members owe him thanks for his loyal support. He loved competitive sports, in particular basketball, and entered every game with an enthusiasm that was characteristic of his approach to life, and an aggressiveness that contrasted with his gentleness in other spheres.

An annual graduate-student prize to be awarded for significant achievement in computational physics is being established at Princeton University in memory of Raymond Grimm.

JOHN L. JOHNSON
Princeton Plasma Physics Laboratory
ROBERT L. DEWAR
Australian National University, Canberra

Avadh Behari Bhatia

Avadh Behari Bhatia, a pioneer of electronic transport theory, died at the age of 63 on 27 September 1984. Bhatia was born in India and attended the University of Allahabad where he was awarded a BSc in 1940 and a DPhil in 1946 under the supervision of K. S. Krishnan. In 1947, Bhatia went to the University of Liverpool and received his PhD under Herbert Fröhlich. He also spent some time in the University of Bristol, where he was a research scholar with Nevil F. Mott's group. In 1952 he moved to the University of Edinburgh where he continued his research under Max Born. Bhatia came to Canada in 1953 with the award of an NRC fellowship and after staying two years in the laboratories of the National Research Council in Ottawa he accepted a position in the physics department of the University of Alberta, where he remained for the rest of his life. He became professor of physics in 1960 and for 1964–69 he was the director of the Theoretical Physics Institute.

Bhatia and Krishnan pioneered the calculation of the electronic transport properties that later formed the basis for the pseudopotential theory of electronic scattering in metals. He also contributed to the theory of diffraction of light by ultrasonic waves, and wrote a chapter on this topic in the classic *Principles of Optics* by Max Born and Emil Wolf. In the early 1970s Bhatia, with the help of a number of collaborators, started a very detailed formulation of the structure factors for multicomponent liquid alloys. This work has now become the standard in this field. In the past few years, collaborating with Norman H. March of Oxford University, he studied the surface properties of liquid alloys; this joint work has contributed in a significant way to the understanding of these alloys.

Bhatia's contributions were not limited to the physics of condensed matter and ultrasonic waves, but also included pioneering work in theoretical nuclear physics. His work on the scattering of polarized neutrons by a proton gas was done independently and at the same time as the celebrated work of Lincoln Wolfenstein. This was followed by a novel and simple explanation of the angular distribution of stripping reactions, which he did in collaboration with his colleagues at the University of Liverpool. Later, in Alberta, working with Parkash C. Sood and Lynne Trainor he proposed an alternative method to the Fermi gas model of nuclear matter, by applying the Wigner–Seitz theory to a quasilattice model of nuclear matter. In addition to writing a chapter in the *Principle of Optics*, Bhatia assisted Born in revising his other well-known treatise *Dynamical Theory of Crystal Lattices*, which Born wrote with Kerson Huang. His own book *Ultrasonic Absorption* (Oxford U.P., 1967) is an astute authoritative exposition of every aspect of the theory and a cornerstone for anyone who may wish to study this subject. A second book, written with Ram N. Singh and based on Bhatia's lectures on the mechanics of deformable media, is nearly complete and will be published posthumously. The Fifth International Conference on Liquids and Amorphous Metals in 1983 was dedicated to four distinguished scientists: Pol Edgard Duwez, Nevil F. Mott, David Turnbull and Bhatia, whose work was cited as a significant contribution in this field.

BHATIA

We mourn Bhatia's death, but we take comfort in knowing that his contributions will live as well as the memory of his kindness and charming modesty.

M. Razavy
S. B. Woods
The University of Alberta

Gifford G. Scott

Gifford G. Scott, the discoverer of the thermomagnetic gas torque that came to be called the Scott Effect, died of a heart attack on 2 May 1984.

Scott was born in Detroit on 2 March 1909. Upon receiving his BS from the University of Michigan in 1939, he joined the General Motors Research Laboratories as a research engineer. Shortly thereafter, the Research Laboratories' founder, Charles F. Kettering, chose him as a collaborator on magnetism studies. Scott's ensuing 40-year career brought him worldwide recognition in that field.

Among his accomplishments were some of the earliest measurements of gyromagnetic and electron inertia effects. He was a pioneer in studies of the Einstein–de Haas effect, and was the first to verify the Kittel–Van Vleck theory relating the magnetomechanical and spectroscopic splitting factors. During World War II, he worked on the development of infrared detection equipment for use on submarines. In the 1950s, Scott produced early photographs of magnetic domains in ferromagnetic materials while studying single-crystal iron whiskers with Robert V. Coleman, now of the University of Virginia. His discovery in 1967 of a magnetothermal torque useful in studying the fundamental behavior of gas molecules resulted in the initiation

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