

Maurice remained active in research and consultation, which included the problem of the disposal of radioactive waste, until 1999, when he suffered a stroke that left him effectively a quadriplegic at age 86. After a brief period of severe depression, his acceptance of his condition led to an active intellectual life, which continued until his death.

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Brian Garner Wybourne

Brian Garner Wybourne, atomic theorist and fellow of the Royal Society of New Zealand, died on 26 November 2003 of a stroke in Toruń, Poland, where he was a professor at the Nicolaus Copernicus University. He is remembered by physicists chiefly for his groundbreaking work on the energy levels of rare-earth ions and applications of Lie groups to the atomic f shell and by mathematicians for his work on group representation theory.

Brian was born on 5 March 1935 to a dairy farming family in Morinsville, New Zealand. In 1960, he completed his PhD on the solid-state spectra of trivalent rare-earth ions at the University of Canterbury in Christchurch, New Zealand, under the supervision of Alan Runciman.

Immediately after his PhD, Brian moved to Johns Hopkins University in Baltimore, Maryland, where an active experimental program in the spectroscopy of rare-earth ions in crystals was under way. In those days, only a few excited states of the atomic f shell had been identified, and Brian set about writing computer programs to include spin-orbit effects systematically. By providing accurate eigenfunctions, he facilitated the development of a theory of intensities for optical transitions. The knowledge that we have today of the optical properties of the tripositive rare-earth ions is due in large part to his efforts.

In 1963, he continued his work at Argonne National Laboratory, where his vast energies became apparent. His colleagues often had their reveries interrupted by Brian's question, "What's happened since yesterday?" His book *Spectroscopic Properties of*

Rare Earths (Interscience, 1965) became a valued working tool.

Brian returned to Canterbury in 1966. Setting out to overcome the tyranny of distance, he invited to Canterbury many distinguished Erskine fellows and traveled widely himself. He supervised numerous students and served as head of the physics department from 1983 to 1989. Brian gave particular support to new developments in large ring lasers, medical physics, and astronomy. He had a marked and lasting effect on physics at Canterbury.

Brian's own research expanded into the use of group theory across wide areas of physics and chemistry. In 1967, he stunned an audience of spectroscopists at a conference at the National Bureau of Standards (now NIST) in Gaithersburg, Maryland, by stressing the usefulness of Dudley Littlewood's theory of plethysms (the study of the symmetry of products of objects that themselves possess symmetry) to atomic theory. He spelled out the details in his book *Symmetry Principles and Atomic Spectroscopy* (Wiley-Interscience, 1970).

Like many physicists, Brian was happily seduced by the beauty and power of mathematics, as evidenced by the publication in 1974 of his book *Classical Groups for Physicists* (Wiley), which received a rave review in *Nature* that same year by Nobel laureate Abdus Salam. Brian's mathematical legacy includes the exploitation of Schur functions in both classical and exceptional Lie group contexts and important work on representations of symmetric groups. Brian also uncovered a revealing analogy between spin representations of orthogonal groups and infinite-dimensional representations of symplectic groups. To facilitate that work, he developed his software package SCHUR for calculating quantities of physical interest and exploring mathematical conjectures.

In 1991, Brian arrived as a visiting professor at the Institute of Physics of the Nicolaus Copernicus University. The gothic architecture of the old town and the friendly academic atmosphere charmed him into staying permanently and made Toruń the base for the intellectual adventures that he referred to as his "Polish odyssey." He identified strongly with his new university and was an advocate of its projects and plans. At international conferences, he represented the Polish point of view and demonstrated his pride in his new country, its history and tradition, and its people and their prospects for



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the future.

For Brian, that was an extremely fruitful period. In his 13 years in Toruń, he produced some 80 of his 190 publications. Brian was particularly adept at identifying challenging problems and communicating them to others. He sustained many collaborative projects, several of which brought mathematicians and physicists together in a hugely enjoyable and fruitful way. He remained active in research until his death, which came just two months after he had received a personal award from the Polish Ministry of Education for his "lifetime scientific achievements."

Brian left a rich legacy for those who follow in his path. He is missed by his friends, collaborators, colleagues, and a wide group of his students spread around the world.

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Letters and opinions are encouraged and should be sent to Letters, PHYSICS TODAY, American Center for Physics, One Physics Ellipse, College Park, MD 20740-3842 or by e-mail to pletter@aip.org (using your surname as "Subject"). Please include your affiliation, mailing address, and daytime phone number. We reserve the right to edit submissions.