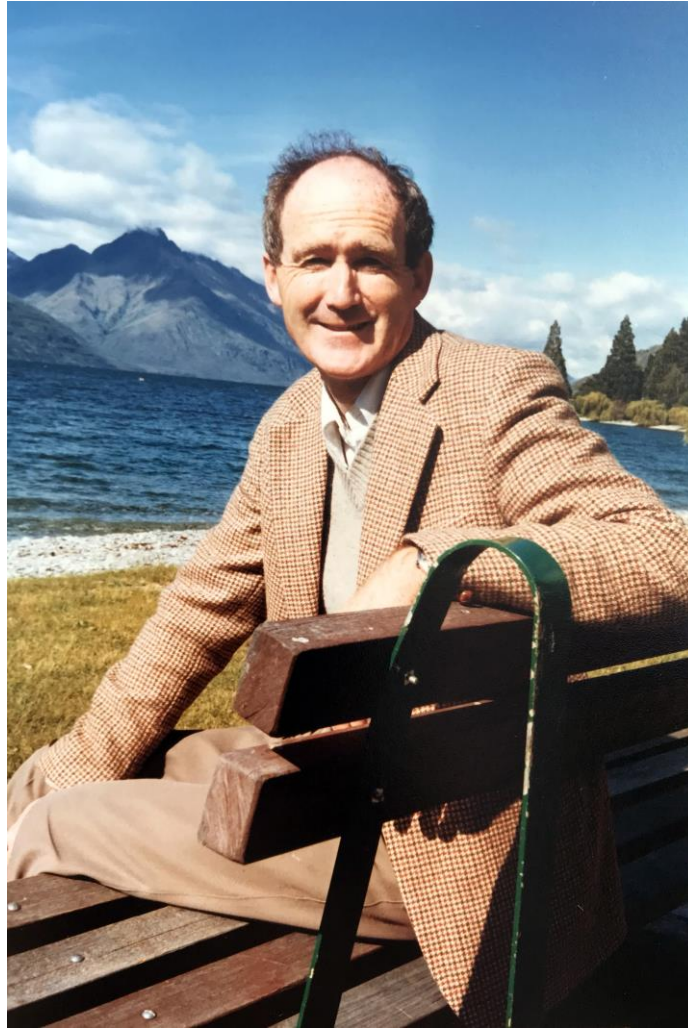




Professor Anthony C.B. Molteno: pioneering, polymath ophthalmologist
(1938-2023)

The death of Professor Anthony Molteno, at age 85, prompts reflection on the life and career of possibly the most innovative—and certainly one of the most intriguing—glaucoma surgeons of all-time. An individual of rare talent and originality, best known for inventing the world's first glaucoma drainage valve (“the Molteno implant”), Molteno was a pioneering clinician-scientist and fascinating character.

Born in Cape Town, South Africa, he developed a fascination for telescopes at a young age, when he began to grind his own lenses. When his parents built a new house, he even persuaded them to include a sliding roof to ease use of his telescopes for star-gazing. Although passionate about mathematics and physics, he did not recall his school days fondly. He liked to tell people that his best subject was divinity. (He did not believe in God, but he maintained a lifelong interest in world religions.)

After graduating in medicine from the University of Cape Town, Molteno was drawn to ophthalmology via his love for lenses. He served as an ophthalmologist at Baragwanath Hospital, before acting as head of the Department of Ophthalmology at the University of Stellenbosch and Tygerberg Hospital. Opposed to apartheid, Molteno and his wife Tess (their marriage spanned more than six decades from 1961) and their three children left South Africa in 1977, re-locating to New Zealand where he assumed

an academic position at Otago University in Dunedin, initially as Consultant and then from 1984 as Head of the Department of Ophthalmology.

Molteno implants, now used extensively in glaucoma surgery worldwide, had their origins in the 1960s when Molteno began tackling intractable glaucoma. In his typically imaginative and resourceful style, his first implants were made from dental acrylic, boiled for hours to avoid chemical leaching. In 1969 he published the first article about treating glaucoma with a novel drainage device involving a small implanted plate.

Establishing the Otago Glaucoma Surgery Outcome Study, a long-term follow-up study into glaucoma surgery, Molteno monitored more than 1000 eyes with a Molteno implant, and more than 1000 eyes that had a trabeculectomy, at Dunedin Hospital since 1977 to determine their long-term outcomes. This work provided uniquely valuable insights into the processes of bleb formation and the life-cycle of fibrosis following glaucoma surgery, reported in nearly 100 articles and seven book chapters.

Molteno's imaginative contributions to clinical problem-solving extend well beyond the management of glaucoma. For example, he developed the bone-derived hydroxyapatite M-Sphere orbital implant, used following enucleation. Mischievously naming this bovine-derived implant "the *Moabone* orbital implant" to evoke New Zealand's extinct giant flightless bird, Molteno was amused to witness the confusion and agitation this name created among customs agents each time he exported an implant. Another major contribution was his invention of a photo-screening method to detect early strabismus and ametropia in infants. In his typically unconventional style, Molteno tested the device on sealions during a visit to a local beach, entailing a narrow escape when their sunbathing were disturbed.

Held in the highest regard by colleagues and patients everywhere, Molteno was an inspirational leader and teacher. He fostered an environment that mirrored his personal qualities: enquiring, dynamic, playful, and provocative. He cared deeply for his patients, his students, and the people he worked with, exhorting his trainees to "*cure sometimes, alleviate often, comfort always*". He could relate to patients from a wide spectrum of society, telling a 90 year old patient who could not legally drive after cataract surgery that she was "*fit to fly a plane*".

He encouraged his trainees to be bold and out-spoken, urging them to challenge orthodoxy of all types. He was, for example, sharply critical of the rise of managerialism in hospital medicine, cheekily hanging an "evil eye" above the department coffee machine to ward off hospital administrators. He once prompted the hospital's maintenance department to fix an overdue problem by composing a poem about seagull droppings contaminating an operating theatre through a leaky roof.

Molteno was a gifted polymath. His interests were both diverse and highly-developed, including chess, various card games, botany, sailing and literature. He collected microscopes, partly because he couldn't bear to see old but functional microscopes thrown out. He shared his lifelong fascination for telescopes and astronomy with his trainees, inviting them to evenings with him and Tess at their farm to marvel at the stars while discussing philosophy, politics and countless other topics. At one of these dinners, he advised that one really had to read only four books to understand life: the Bible, Machiavelli's *The Prince*, *The Peter Principle*, and the *Kama Sutra*.

Molteno's extraordinary contributions to ophthalmology have been widely recognised, including by the award of the Goldmann Medal from the International Glaucoma Societies (1998; he was its second-ever recipient), Officer of the New Zealand Order of Merit (2006), Distinguished Service Award from the Royal Australian and New Zealand College of Ophthalmologists (2009), International Society of Glaucoma Surgery Medal (2014), and the American Glaucoma Society Innovator Award (2015).

Elected an Emeritus Member of the Glaucoma Research Society, he was also president of the Ophthalmological Society of New Zealand.

He is survived by Tess and his three children, 11 grandchildren and 1 great grandchild.

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