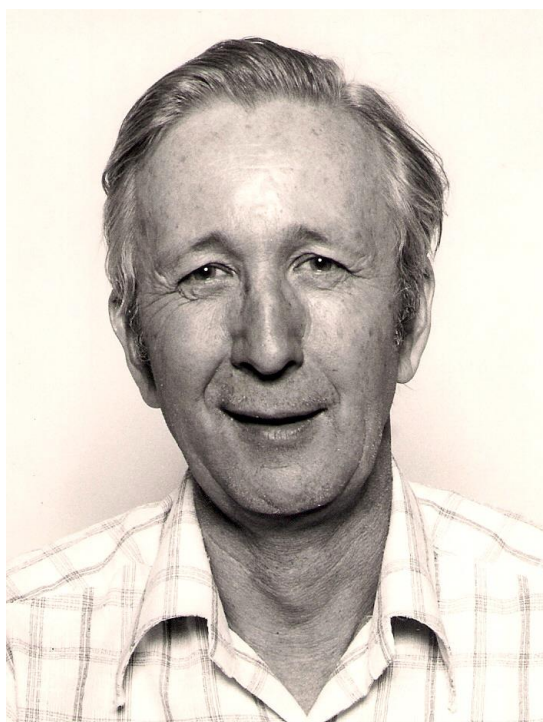


OBITUARY

William Walcott (Bill) Emerson (1925-2012)



Dr Bill Emerson a distinguished soil scientist and Senior Principal Research Scientist in CSIRO, died aged 86 in Adelaide on 5 February, 2012. As well as being an internationally renowned soil scientist, Bill has been a friend and mentor to CSIRO staff for over 40 years (retired in 1990, after 33 years and honorary post-retirement fellow of 10 years). For his achievements in soil science, Bill was awarded the prestigious Prescott Medal of Soil Science by the Australian Society of Soil Science in 1992 and Honorary Life Member of the Soil Science Society of Australia.

His scientific work over the years represents a major contribution to world soil science and agriculture, specialising in understanding interparticle bonding in soils in relation to water movement, aggregate stability and the effect of cations on clay dispersion. Bill's work helped to provide answers to practical problems and evidence of this is the famous 'Emerson' dispersion test (Australian Standard 1289, C8.1, 1980), which grew from working on simple tests to predict piping in farm dams. This test classifies soil aggregate stability into eight classes based on the fractioning, swelling and dispersion of soil aggregates when immersed in water.

Bill Emerson was born in London in 1925. He was educated at Oxford University (BA in mathematics and physics, 1946) and London University (PhD 1953) and worked at the Rothamsted Experimental Station before relocating with his young family to the Division of Soils, CSIRO, in Adelaide in 1957 where he joined the Soil Physics section. He spent periods in the USA in 1961-2 and 1970 and also contributed to an ACIAR project on rice-growing soils in the Philippines. By 1957 he had published three papers in Nature, all of which concerned clay and clay-organic matter complexes and two more followed later. He published about 70 articles, mostly journal papers and book chapters and was senior author or sole author of most of them.

His early research interest in applying his knowledge of physics and mathematics to agriculture probably started in his youth while helping a relative grow onions, and developed to the work he is famous for. At Rothamsted and Cambridge in England his research included explaining water conduction by severed plant roots and why mole drains retained their integrity.

He also investigated how large polymer molecules interacted with clays such as montmorillonite for comparison with the stabilising of soil crumbs with organic matter. On relocating to Australia, he continued with these interests. His work always had a practical streak and this is exemplified by his early work in Australia which related to clay dispersion and 'piping' that led to the failure of earth dams for farm and domestic water supplies. This was caused by high levels of sodium adsorption on the clays used which dispersed under the influence of fresh water and eventually led to piping and dam failure.

Later in his research life, he began to look at the different effects of the soil exchangeable cations calcium, sodium and magnesium on the physical properties of soil aggregates and the binding of herbicide molecules to clays. He contributed with others to problems of foundation design due to soil movement caused by due to wetting and drying. He also worked on overburden and mine spoil failure in the coal mining industry at Ranger Uranium Mine in the Northern Territory.

Bill was a modest, motivated and innovative scientist. Although his main field of research would appear to be fairly specialised, he applied it successfully to a wide range of practical problems. Bill was always friendly and a true gentleman, and lived his productive life as a scientist in a way that is uncommon these days; and scientists will miss a colleague from whom they learnt much. He was a good bridge player, liked cricket and was partial to a glass or two of champagne. He is survived by his wife and four children.

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