

Norman Willison Simmonds

Professor Norman Simmonds died at the Royal Infirmary, Edinburgh on 4 January 2002. One of four children, with a non-identical twin brother, Ralph, his father was a civil servant and his mother came from a Perthshire farming family, from whom he took his middle name. The family moved around in his early years, largely as a result of his father's career. By the time he entered secondary education, the family was established in Croydon, and he attended Whitgift School from 1934 to 1940.

At school he was stimulated, as were so many budding botanists, by a gifted notable teacher, Cecil T Prime. Norman Simmonds recognised this debt to C T Prime in 2000, when he contributed a small piece to the School Magazine, *The Whitgiftian*, under the title of "Prime's People". This piece listed over twenty distinguished biologists who had studied the fundamentals of their subject at Whitgift School, all of whom were eager to acknowledge the stimulation they had received at school under Prime's guidance.

He won an Open Exhibition (Scholarship) to Downing College, Cambridge where he was much influenced by Professor D G Catcheside who encouraged his interest in genetics and cytogenetics.

After a distinguished undergraduate career, he was awarded a First class degree in the Natural Sciences Tripos part II (Botany - but with a strong bent to genetics and plant breeding). In 1943 he was granted a Colonial Agricultural Scholarship and studied at Cambridge and the Imperial College of Tropical Agriculture (ICTA) in Trinidad and in 1945 was awarded A.I.C.T.A. This award was to be followed by others from Cambridge, an MA in 1948 and a Sc.D in 1966.

The introduction to tropical agriculture afforded by the time spent in Trinidad was the start of a life-long interest in the crops and needs of developing societies. He stayed in the West Indies until 1959, initially as lecturer in Botany at ICTA and latterly as Senior Cytogeneticist in the Banana Research Scheme and became established as a vigorous researcher, initially with K.S.Dodds, developing a banana breeding strategy through constructed diploids crossed to triploids. This was also the time when he started to develop ideas on genetic resources, conservation and utilisation following two major collecting trips to East Africa (1948) and the Pacific, Malaysia, Thailand, and North India (1954/55). Material from those trips is still of value almost fifty years later but at that time led to enhanced evolutionary understanding of the group.

This extensive experience led to two key books, the standard monograph *Bananas* (1959, 1966, and with R.H.Stover in 1987), long regarded as the banana researcher's bible, and *Evolution of the Bananas* (1962) in addition to 40 papers published during his period in Trinidad.

In 1959, Norman returned to the United Kingdom as head of the Potato Genetics Department at the John Innes Institute at Hertford, rejoining K.S.Dodds, the then Director. He characteristically threw himself into research on potatoes, publishing an array of papers covering tuber dormancy, seed germination, polyploidy, callus differentiation, virus transmission, chimeral and other mutants, linkage studies and disease resistance.

It was during this time that he developed the concept of base broadening, now found to be of fundamental importance and effective for potatoes. This proved to be a valuable recurring theme in much of his later more reflective work as it became accepted that such approaches had general applicability to a very wide range of crop species. It was one of Norman's rare regrets that, while his ideas on base broadening received wide theoretical acceptance, there was relatively little take-up of the concept in practice except in those crops where he had an opportunity to influence direction and approach, namely sugar cane, oil palm and rubber.

Other important changes in Norman's life occurred during this very busy period, most important of which was the willing change from bachelor to married man as Christa entered into his life. She was to remain at the centre of his life, a loyal and supportive partner, until his penultimate year.

For the third period of his professional life Norman Simmonds moved northwards nearer to his family roots when in 1965, he accepted the post of Director of the Scottish Plant Breeding Station, then at Pentlandfield on the outskirts of Edinburgh. This was a demanding role necessitating considerable administration and committee work, a requirement which Norman found irksome as it left little time for personal research and many of the ideas that he had initiated at the John Innes Institute had to be left for others to pursue.

It is probably true that Norman was never really attracted to management matters but he did find the time to re-establish his education links *via* various teaching initiatives with the Botany Department of the University of Edinburgh. These initiatives continued into the final phase of his career when he joined the staff of the Edinburgh School of Agriculture in 1976. This return to academia allowed Norman time for reflection and writing. During his active career he had built up a wide circle of friends and acquaintances. He recognised that the knowledge of a breeder of one crop could have benefits for workers dealing with other crop species. This culminated in the book, *Evolution of Crop Plants* (1976, now in second edition, Smartt and Simmonds 1995), edited by Norman but consisting of the authoritative contributions of 86 scientists, plus six chapters written by Norman as the appropriate expert. This extremely popular book did much to stimulate interest in

crop plants and the systematic approach required by the editor (introduction, cytotaxonomy, background, early history, recent history and prospects) has proved to be particularly valuable to educators wherever crop evolution and breeding is taught. This book was complemented by *Principles of Crop Improvement* (1979). This highly regarded key text has provided students and practitioners with a synthesis of current breeding approaches along with a bibliography that would allow the motivated into the current literature in any particular area (now in 2nd edition, Simmonds and Smartt, 1999).

During this period, and continuing well after his formal retirement in 1982, Norman continued his interest in tropical agriculture and developed some important consultancies. He travelled widely throughout the tropics to some 20 countries, partly as Chairman of the Quinquennial Review of the International Board for Plant Genetic Resources and later on behalf of FAO and the World Bank.

The recommendations from these reviews were not always popular, but in typical fashion Norman did not skirt the problems but actively engaged in robust discussion, seeking to persuade all parties of the sense of his logic. He continued to make valuable contributions to breeding strategies in a number of economically important crops via consultancies with Sugar Cane Breeding in the West Indies, Copersucar of Brazil and the Rubber Research Institute of Malaysia. Even well into retirement, a term he only accepted with reluctance, he was still active academically, writing and publishing on a wide range of topics, not only within his broad subject area, but also in relation to his hobbies, most notably on trout fishing. Major recent reviews by him covered horizontal resistance to diseases in crops, potato propagation by seed as distinct from clonal propagation by tubers, tropical crops and their improvement, and an informal history of statistics.

Over the years, Norman received many accolades. He was elected a fellow of the Royal Society of Edinburgh in 1970, and Edinburgh University made him an Honorary Professor in 1975. One international award, which gave him considerable pleasure, was that of Distinguished Economic Botanist by the American Society of Economic Botany in 1991, the only non-American at that time to be so honoured.

Norman Simmonds was a unique and stimulating individual with many diverse interests. He will be remembered as an iconoclast, a gifted scientist, a profound thinker and a stimulating teacher. He did not develop a following of research students; preferring personal academic endeavour. Nevertheless, as a result of his writing and teaching he has profoundly influenced many students and researchers and has left his mark on the important subject of plant breeding, particularly of species of economic importance to man. Those who knew him well will remember his kindness and generosity and his delight in provoking discussion.

Norman was an active Fellow of the Royal Society of Edinburgh. One of the last meetings in which he played a major role was as a participant in a debate on the subject "Was Malthus right or wrong?". He argued passionately that Malthus was fundamentally correct in his thesis and he predicted that we were fast approaching a time when the increase in the world human population would outstrip the ability of global agriculture to produce enough food to avert widespread hunger, a view not completely accepted by some members of the audience. Norman was also a very regular attendee at the meetings of the Society's Coffee Club, and his pertinent questions and apposite comments were always greatly appreciated by all the Fellows present.

Professor Norman Simmonds is survived by his twin brother Ralph. His wife Christa died in December 2000.

William Spoor and Peter Wilson

Norman Willison Simmonds ScD, AICTA, FIBiol: born 5 December 1922; elected FRSE 2 March 1970; died 4 January 2002.