

Clayton O. Person, 1922–1990

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Clayton Person died on September 1, 1990, after many years of ill health. His sickness kept him from his scholarly activities in the recent years since his retirement, but for three decades he was a dominant figure in Canadian genetics, and became well-known internationally for his scientific contributions.

Clayton was born in Regina, 1922, to parents who had recently immigrated from Sweden. He grew up on the prairies during the Depression, and served with the Royal Canadian Navy in the Second World War. He was a member of the Canadian force that landed on the beaches in the Dieppe raid and was wounded in this action.

Clayton was educated at the University of Saskatchewan (B.A. 1949 and M.A. 1951) and at the University of Alberta (Ph.D. 1953). He became head of the Genetics Department at the University of Alberta in 1961 and moved to the Botany Department at the University of British Columbia in 1966.

Although Clayton was the quintessential all-rounder, with interests in all areas of science and many other areas of human affairs, he was best known for his contributions to the genetics of host-parasite interactions. This is a complex system to study; in most avenues of genetic inquiry the experimenter has enough of a challenge trying to analyze one organism, but in host-parasite systems there are two species to analyze simultaneously.

However, Clayton Person had an exceptional analytical talent, and through a series of elegant publications developed a thorough theoretical structure for the study of the complex genetic interactions between hosts and parasites at the population level. The basis for his papers was the gene-for-gene model of Harold Flor, which proposed that for each virulence gene in the parasite, there is a specific matching resistance gene in the host. Flor's idea came from his genetic studies of flax rust, a fungal disease of flax. Person took this basic system and from it developed a practical method for showing how the gene-for-gene relationship could be identified in parasitic systems that are not accessible to classical genetic analysis. This has revealed that the gene-for-

gene relationship exists in a wide range of parasitic systems. Perhaps the single most important application has been in the analysis of coffee rust, a fungal disease of the coffee plant and one of the greatest threats to the economies of Central and South America. However, the 'Person model' is relevant to any of the diseases of crop species.

Person also developed a theoretical basis for strategies of crop disease management. Of particular significance was the notion that resistance genes should be cycled through time, in other words, used, then withdrawn, then reintroduced later, to keep the plants one jump ahead of the parasites without the need to constantly select new resistance genes. Another area to which he made a major contribution was the development of a theoretical basis for the use of 'multilines', genetically heterogeneous crops that provide a stable, acceptably low level of disease susceptibility.

Host-parasite interactions are now the subject of intensive molecular studies, using as their jumping-off point the elegant classical gene-for-gene relationships worked out by Clayton Person. In fact on August 29, just two days before Clayton died, a paper delivered at the Fourth International Congress of Mycology, in Regensburg, Germany, reported the first isolation of the DNA of a fungal avirulence gene. This was precisely one of the type of genes that Clayton Person's classical studies had made the world believe in.

He was President of the Genetics Society of Canada 1966–1967. He has received many honors for his work. He was elected Fellow of the Royal Society of Canada in 1971, Fellow of the American Phytopathological Society in 1981, received the British Columbia Science Council Gold Medal in 1981, the Genetics Society of Canada Award of Excellence in 1982, the Flavelle Medal of the Royal Society of Canada in 1982, an Honorary Doctorate from the University of Saskatchewan in 1984, and was awarded the Order of Canada in 1987.

Clayton was much admired not only for his scientific acumen, but for his generosity to others, especially young scientists. He was a fascinating raconteur and commentator on the passing parade of life. He was one of Canada's most creative biologists, and he will be missed. He is survived by his wife Mary, and their children Joan, Jan, and Lisa, all of whom live in White Rock, B.C.