

# Cyril Dean Darlington Biography

## Cyril Dean Darlington

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# Contents

|  |                   |
|--|-------------------|
| <a href="#">Cyril Dean Darlington Biography.....</a> | <a href="#">1</a> |
| <a href="#">Contents.....</a>                        | <a href="#">2</a> |
| <a href="#">Biography.....</a>                       | <a href="#">3</a> |

# Biography

Cyril Dean Darlington's research and writing centered on chromosomes, genes, and the process of **meiosis**. Darlington's work on chromosomes helped shape the understanding of how **evolution** is dependent upon the concepts of hereditary mechanisms. He determined that **crossing over** of chromosomes during meiosis led to variable characteristics inherited by organisms.

Darlington was born in Chorley, Lancashire on December 19, 1903. In 1923, after graduating from Wye College in Ashland, Darlington began his career as a biologist at the John Innes Horticultural Institution. Darlington worked as a volunteer focusing on cytology and **genetics** until 1937 when he became head of the Cytology Department. In 1939 he was promoted to Director, and he remained at this post for an additional 16 years. During his time at the John Innes Horticultural Institution, Darlington studied the chromosomes of *Oenothera* that led him to propose two **chromosome** theories. The first was the theory of a structural **hybrid** and the second was the theory of fertility of polyploids.

Darlington continued his research utilizing the chromosomes from the salivary glands of *Drosophila* to advance the understanding of centromeres.

In 1947, Darlington founded the journal *Heredity*. After resigning from the John Innes Horticultural Institution in 1953, Darlington was elected to a Professorship of Botany at Oxford.

Although Darlington's career began through the study of **plant genetics**, he was also known as a sociobiologist who studied the influence of genes on human society and history. In 1969, he published *The Evolution of Man and Society* that began with prehistory and continued through present day in order to explain how **genetic variation** regulated behavioral characteristics of various cultures. Darlington also explored the effects of **inbreeding** versus outbreeding on genetic variation. He argued that inbreeding and outbreeding both had their own advantages for a **species**. He claimed that inbreeding permitted adaptation and easy transmission of culture while outbreeding caused genetic variation that promoted selected survival. Because both also had disadvantages, Darlington stated that a combination of inbreeding and outbreeding within a species would lead to the most rapid evolution of that species.

Darlington first taught genetics at Oxford University. In addition to research, writing, and teaching, Darlington took an active role in the Botanic Garden and the Nuneham Courtenay Arboretum as well as creating the Genetic Garden. Darlington retired in 1971 but remained at Oxford until his death on March 26, 1981.