

IN MEMORIAM

PROFESSOR ERNST MAYR  
(1904 - 2005)

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At the age of 100 after a short illness, the evolutionary biologist Ernst Mayr died on February 3, 2005. Ernst Mayr born in Bavaria, Germany, on July 5, 1904. The leading evolutionary biologist of the 20th century, he began his university studies as a medical student in 1923 at the University of Greifswald. In 1925, after completing his preclinical studies and passing the candidate of medicine examination, Mayr decided to change his studies from medicine to zoology, partly because Professor Erwin Stresemann (1889-1972), impressed by Mayr's enthusiastic interest in natural history, promised to place him on an ornithological expedition to the tropics. He had to work up to 18 hours every day for 16 months to complete his doctoral dissertation on ornithology. Mayr completed his Ph. D. degree in May of 1926 at the age of 21 and immediately accepted a position as an Assistant at the Berlin Museum. Although Mayr's doctoral thesis dealt with biogeography (analyzing the spread of the serin finch, *Serinus canaria serinus*, in Europe), he received an outstanding education in avian biology and systematics during his student days in Berlin and thereafter as an Assistant with the Berlin Museum from 1926 until February of 1928, when he departed for New Guinea at the age of 23. Mayr was again in residence in Berlin for only eight months in 1930 before leaving for New York City in January of 1931 at the age of 26.

Coming to the United States in 1931 and joining the staff of the American Museum of Natural History (AMNH) were perhaps the most important factors in Mayr's career. Once he reached the AMNH, he worked full steam on the world's best collection of birds from the South Pacific, not only doing first-class systematic research, but also thinking about what he was doing and inquiring deeply into the theoretical foundations of his research. Although originally Mayr had been offered a visiting position for a year, he became the Whitney-Toth-



schild Curator at the AMNH in New York City. He moved to Harvard University in 1953 and was appointed to the position of Agassiz Professor in the Museum of Comparative Zoology, a position he held until age-mandated retirement. In 1961 he was appointed director of the university's Museum of Comparative Zoology.

Beginning with the publication of his first scientific paper in 1923 (observations on the migratory behavior of red-crested pochards, *Netta rufina*), Ernst Mayr had an active scholarly career spanning 70 years and continuing unabated until his death. Although Ernst Mayr was one of the major figures in evolutionary biology during the 20th century, he was primarily a naturalist and an ornithologist.

As an ornithologist, Mayr described many new taxa of birds. These include 26 currently recognized species and about 410 subspecies. However, he was always interested in the theoretical explanations behind his empirical systematic work. The most important results of Mayr's systematic work were his clear realization and demonstration of variation among individuals in a local population and of geographical variation among populations within the limits of a species. These were to become major parts of his contribution to evolutionary theory and to general philosophical ideas. Mayr's unwavering belief in "population thinking", a term he coined, stems directly from his analyses of individual and geographic variation in birds.

His *Systematics and the Origin of Species* (1942) was the pivotal publication in Mayr's career as an evolutionary biologist. With this book, Mayr immediately acquired a central position in evolutionary synthesis and the new systematics. In many ways this book became the "bible of the new systematics". The objective of this book

was to show that evolutionary biology consists of two fields: (1) phyletic evolution and mechanisms of adaptation and (2) speciation and the origin of biological diversity. In this book, Mayr's interests were centered on topics associated with speciation and explanation of increase in diversity during evolutionary change, a field which had been entirely ignored by evolutionary biologists at that time.

Ernst Mayr will always be most closely associated with the species concept and the process of speciation. The importance of Mayr's contribution to these topics is difficult to appreciate fully because his ideas are now so widely accepted.

Throughout his career, Ernst Mayr sought to bring philosophy into closer contact with biological science. This effort took many forms. Early in his career, Mayr found biological systematics in the grip of crude operationalism about scientific concepts. As biologists debated the nature of species and correct principles of classifications, Mayr added a philosophical note. The distinction between "ultimate" and "proximate" causes is considered Mayr's major contribution to the philosophy of biology. In his 1961 article, Mayr argued that the biology of proximate causes ("functional biology") "*is virtually con-*

*cerned with the operation and interaction of structural elements, from molecules up to organs and whole organisms.*" His ever-repeated question was, "*How does something operate, how does it function?*" According to Mayr, evolutionary biology, the biology of ultimate causes, "*differs in its method and the problems in which it is interested. Its basic question is 'Why?'*"

Mayr's interest in philosophy and history of science culminated in three books: *The Growth of Biological Thought* (1982), *One Long Argument* (1991) and *This is Biology* (1995). In these books, Mayr showed the full range of his scientific, historical, and philosophical knowledge and ideas, and the persuasive power of an experienced and gifted writer.

Ernst Mayr was a key player in the organization of evolutionary biology as a discipline within biology. He was founding editor of *Evolution* (1947-49) and president of the Society for the Study of Evolution (1950).

Those who knew Ernst Mayr are aware of the fact that in addition to being one of the leading evolutionary biologists of the twentieth century, he was also a warm, sensitive, courageous human being devoted to the welfare of humankind and other denizens of the planet Earth.

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