Bernard Katz Biography

Bernard Katz

The following sections of this BookRags Literature Study Guide is offprint from Gale's For Students Series: Presenting Analysis, Context, and Criticism on Commonly Studied Works: Introduction, Author Biography, Plot Summary, Characters, Themes, Style, Historical Context, Critical Overview, Criticism and Critical Essays, Media Adaptations, Topics for Further Study, Compare & Contrast, What Do I Read Next?, For Further Study, and Sources.

(c)1998-2002; (c)2002 by Gale. Gale is an imprint of The Gale Group, Inc., a division of Thomson Learning, Inc. Gale and Design and Thomson Learning are trademarks used herein under license.

The following sections, if they exist, are offprint from Beacham's Encyclopedia of Popular Fiction: "Social Concerns", "Thematic Overview", "Techniques", "Literary Precedents", "Key Questions", "Related Titles", "Adaptations", "Related Web Sites". (c)1994-2005, by Walton Beacham.

The following sections, if they exist, are offprint from Beacham's Guide to Literature for Young Adults: "About the Author", "Overview", "Setting", "Literary Qualities", "Social Sensitivity", "Topics for Discussion", "Ideas for Reports and Papers". (c)1994-2005, by Walton Beacham.

All other sections in this Literature Study Guide are owned and copyrighted by BookRags, Inc.

Contents

Bernard Katz Biography.....1

Contents.....2

Biography.....3

Biography

Katz was born in Leipzig, Germany, on March 26, 1911. He received his M.D. from the University of Leipzig in 1934, just as Adolf Hitler (1889-1945) was gaining power in Germany. Katz, who was Jewish, left his homeland for England where he pursued his post-graduate studies at the University of London. He eventually earned a Ph.D. in 1938 and a Sc.D. in 1934 from London.

During his years in London and (briefly, during World War II) Sydney, Australia, Katz worked with other scientists on the transmission of nerve impulses along a neuron and across the synaptic gap between neurons and muscles. With **Alan Hodgkin** and **Andrew Huxley**, he found that the movement of a nerve impulse along a single neuron can be described in terms of the diffusion of potassium and sodium ions across the cell membrane. This diffusion of ions creates a small electric potential that corresponds to the movement of the electrical impulse in the neuron.

In the 1950s, Katz concentrated on the transfer of the nerve message across synapses, the spaces between neurons or between neurons and muscle cells. Earlier research by **Henry Dale** (1875-1968) and **Otto Loewi** (1873-1961) had indicated that the neural message is carried across the synaptic gap by means of a chemical substance, a neurotransmitter, later identified as acetylcholine.

Katz eventually found that molecules of acetylcholine are apparently "packaged" in tiny vesicles stored at the end of a neuron. Upon stimulation, the neuron releases packages of acetylcholine that travel across the synapse and stimulate the adjacent muscle cell or second neuron. For this discovery, Katz was awarded a share of the 1970 Nobel Prize for physiology or medicine. He was also knighted by Queen Elizabeth II (1926-) in 1969.