

Chapter 1 : Ernst Chain - Simple English Wikipedia, the free encyclopedia

*Ernst B. Chain Biographical Ernst Boris Chain was born on June 19, 1901, in Berlin, his father, Dr. Michael Chain, being a chemist and industrialist. He was educated at the Luisengymnasium, Berlin, where he soon became interested in chemistry, stimulated by visits to his father's laboratory and factory.*

Ernst Boris Chain Facts Ernst Boris Chain was instrumental in the creation of penicillin, the first antibiotic drug. Ernst Boris Chain was instrumental in the creation of penicillin, the first antibiotic drug. Although the Scottish bacteriologist Alexander Fleming discovered the penicillium notatum mold in 1928, it was Chain who, together with Howard Florey, isolated the breakthrough substance that has saved countless victims of infections. For their work, Chain, Florey, and Fleming were awarded the Nobel Prize in physiology or medicine in 1945. His father was a Russian immigrant who became a chemical engineer and built a successful chemical plant. He gave a number of recitals and for a while served as music critic for a Berlin newspaper. A cousin, whose brother-in-law had been a failed conductor, gradually convinced Chain that a career in science would be more rewarding than one in music. Although he took lessons in conducting, Chain graduated from Friedrich-Wilhelm University in Berlin with a degree in chemistry and physiology. But the increasing pressures of life in Germany, including the growing strength of the Nazi party, convinced Chain that, as a Jew, he could not expect a notable professional future in Germany. Therefore, when Hitler came to power in January 1933, Chain decided to leave. Like many others, he mistakenly believed the Nazis would soon be ousted. His mother and sister chose not to leave, and both died in concentration camps. He stayed there briefly and then went to Cambridge to work under the biochemist Frederick Gowland Hopkins. Chain spent much of his time at Cambridge conducting research on enzymes. Florey, an Australian-born pathologist, wanted a top-notch biochemist to help him with his research, and asked Hopkins for advice. Without hesitation, Hopkins suggested Chain. Florey was actively engaged in research on the bacteriolytic substance lysozyme, which had been identified by Fleming in his quest to eradicate infection. He and Florey both saw great potential in the further investigation of penicillin. With the help of a Rockefeller Foundation grant, the two scientists assembled a research team and set to work on isolating the active ingredient in penicillium notatum. Fleming, who had been unable to identify the antibacterial agent in the mold, had used the mold broth itself in his experiments to kill infections. Assisted in their research by fellow scientist Norman Heatley, Chain and Florey began their work by growing large quantities of the mold in the Oxford laboratory. Once there were adequate supplies of the mold, Chain began the tedious process of isolating the "miracle" substance. Succeeding after several months in isolating small amounts of a powder which he obtained by freeze-drying the mold broth, Chain was ready for the first practical test. His experiments with laboratory mice were successful, and it was decided that more of the substance should be produced to try on humans. To do this, the scientists needed to ferment massive quantities of mold broth; it took gallons of the broth to make enough penicillin powder for one tablet. By Chain and his colleagues had finally gathered enough penicillin to conduct experiments with patients. The first two of eight patients died from complications unrelated to their infections, but the remaining six, who had been on the verge of death, were completely cured. One potential use for penicillin was the treatment of wounded soldiers, an increasingly significant issue during the Second World War. However, for penicillin to be widely effective, the researchers needed to devise a way to mass-produce the substance. Florey and Heatley went to the United States in 1941 to enlist the aid of the government and of pharmaceutical houses. New ways were found to yield more and stronger penicillin from mold broth, and by 1945 the drug went into regular medical use for Allied troops. After the war, penicillin was made available for civilian use. The ethics of whether to make penicillin research universally available posed a particularly difficult problem for the scientific community during the war years. While some believed that the research should not be shared with the enemy, others felt that no one should be denied the benefits of penicillin. This added layers of political intrigue to the scientific pursuits of Chain and his colleagues. Even after the war, Chain experienced firsthand the results of this dilemma. As chairman of the World Health Organization in the late 1940s, Chain had gone to Czechoslovakia to supervise the operation of penicillin plants established there by the United Nations. He

remained there until his work was done, even though the Communist coup occurred shortly after his arrival. When Chain applied for a visa to visit the United States in 1948, his request was denied by the State Department. Though no reason was given, many believed his stay in Czechoslovakia, however apolitical, was a major factor. After the war, Chain tried to convince his colleagues that penicillin and other antibiotic research should be expanded, and he pushed for more state-of-the-art facilities at Oxford. Little came of his efforts, however, and when the Italian State Institute of Public Health in Rome offered him the opportunity to organize a biochemical and microbiological department along with a pilot plant, Chain decided to leave Oxford. While in Rome, Chain worked to develop new strains of penicillin and to find more efficient ways to produce the drug. In 1948 Chain was persuaded to return to England. Through his hard work the Wolfson Laboratories earned a reputation as a first-rate research center. In 1949, Chain had married Anne Beloff, a fellow biochemist, and in the following years she assisted him with his research. She had received her Ph.D. The couple had three children. Chain retired from Imperial College in 1963 but continued to lecture. He cautioned against allowing the then-new field of molecular biology to downplay the importance of biochemistry to medical research. He still played the piano, for which he had always found time even during his busiest research years. Over the years, Chain also became increasingly active in Jewish affairs. He served on the Board of Governors of the Weizmann Institute in Israel, and was an outspoken supporter of the importance of providing Jewish education for young Jewish children in England and abroad—“all three of his children received part of their education in Israel. In 1963 he was awarded the Paul Ehrlich Centenary Prize. Chain was knighted by Queen Elizabeth II in 1963. Increasing ill health did not slow Chain down initially, but he finally died of heart failure on August 12, 1979. *Medicine*, Scribner, 1980, pp. 1-10. Encyclopedia of World Biography. Copyright The Gale Group, Inc.

*Sir Ernst Boris Chain, FRS (19 June - 12 August ) was a German-born British biochemist, and a co-recipient of the Nobel Prize for Physiology or Medicine for his work on penicillin.*

Until her tragic death in at the age of 36, Diana frequently gave interviews and shared her thoughts with many people. In this fresh portrait of Diana on her own life, Nigel Cawthorne gathers her most salient words from the very first till the very last - some known, some forgotten. They show a remarkable woman whose struggles, passion and compassion, continue to inspire two decades later.

*Antarmukhi - A Novel Method of Sridevasenapatiswamy 1 0* This book introduces the concept of chetana and explains the link between meditation and God. This concept is not specific for any religion. Any person who shows enthusiasm to navigate the unending can practice it. The description of the authors own experiences will make the novel concept reach the people easily. This book teaches one how to look into ones self and have a greater understanding of ones own position before and during the meditation. At the end, readers realize that this kind of meditation is not about learning any techniques, methods, or making stressful efforts to train mind for stillness; but this is rather a simple and peaceful journey. Become an Antarmukh, and feel the difference.

*Animal Heroes - True Stories of Sometimes this comes as little gestures of loyalty, and other times they do something that is truly amazing* – even saving human lives. At seventeen, Maggie goes, a lamb to the slaughter, to university. From the s onwards she lives the defining events of her generation: In the s, Maggie finally gets published, falls in love, marries and has a daughter -- but for the next three decades and beyond, she survives, and sometimes thrives, by writing. This frank, bold memoir dares to explore the big questions:

*Harlan Fisher 1 0* When Harlan Fisher was eight years old, he started hearing and talking to what he now calls the Voice because that is exactly what it is, an inner voice that he hears and communicates with continuously. The Voice is an informative and inspirational journey into the discovery of your inner voice and how to listen to your higher energy self. One of the major objectives of the book is to help you identify with all the elements surrounding the concept of hearing an inner voice, just as many famous people have throughout their lives. The book begins with a description of two eight-year-old boys and their encounters with a Voice. The anecdotes help the book read like a novel, even though it is nonfiction and includes all the self help attributes that individuals need to achieve the requirements necessary to discover their own higher energy self. Furthermore, the book reveals a scientific and metaphysical enlightenment that is occurring throughout the world with new ideas that are gaining speed with every new discovery. Part Two teaches techniques to help us listen to the Voice and the importance of understanding how we learn. This section goes into specific detail on how we can remain flexible thinkers and adapt to continuous change. Part Three clarifies the practical information we need to tap into our higher selves and avoid important stumbling blocks in our lives, such as social stigma, fear of the unknown, labeling, education, religion, and mental illness. With the knowledge you attain up to this point, you will be able to translate the various techniques the voice may use to communicate to you. The numerous stories in the book give you variations of what to expect when communicating with the Voice.

**Chapter 3 : The Life of Ernst Chain - Penicillin and Beyond - Lesen Sie das Buch online**

*Ernst Boris Chain Biography Sir Ernst Boris Chain was a biochemist who won the Nobel Prize in Medicine in Check out this biography to know about his childhood, life, achievements, works & timeline.*

Berlin, Germany, 19 June ; d. Ireland, 12 August biochemistry. The Chains also had a daughter, Hedwig. Michael Chain studied chemistry in Berlin, where he later established a firm that produced sulfates Ernst Chain developed an early interest in chemistry. Chain also had a strong interest in a career in music; he was an accomplished pianist and music critic for a Berlin paper. Chain graduated in chemistry and physiology from the Friedrich-Wilhelm University in and received a D. Three months after Hitler assumed the chancellorship of Germany in January , Chain immigrated to England, alone, and became a naturalized citizen six years later. Chain tried to assist them, although his own financial circumstances in England were difficult. Margarete and Hedwig eventually died in the Nazi holocaust Chain began work under Frederick Gowland Hopkins in the department of biochemistry at Cambridge in October and received a Ph. In Howard W. His most significant workâ€”the research for which he received a Nobel Prize in medicine with Florey and bacteriologist Alexander Fleming in â€” concerned penicillin. Fleming had isolated penicillin in He found it was a promising external antiseptic against some pathogenic bacteria, but its chemical instability among other reasons soon led him to abandon penicillin as a therapeutic agent. By May Chain had produced enough penicillin for Florey to conduct tests on mice infected with deadly hemolytic streptococci. These early tests yielded very promising results, Chain, in collaboration with Edward Abraham, spent the rest of the year improving the extraction and purification of penicillin for clinical tests, which began early in Serious problems with the fermentation production of penicillin led the British and American governments, by early Chain and his collaborators at Oxford, however, had shed much light on the chemistry of the drug by this time. They had determined the structures and syntheses of the two compounds produced by the acid hydrolysis of the penicillin molecule. Also, they had discovered the structure of the intermediate compound between these two degradation products and penicillin. By October , they proposed what turned out to be the correct structure of penicillin. That the massive penicillin project failed to produce a practical synthesis of the drug was academic, because workers succeeded in producing penicillin by fermentation, on a mass scale. Yet this development did not diminish the significance of the contributions of Chain and his colleagues. They established a fundamental understanding of the chemistry of penicillin. Before moving, he married biochemist Anne Beloff, with whom he collaborated on many projects during the remainder of his career. They had two sons and a daughter. The center developed into a training ground for researchers interested in production of antibiotics. Thus, a microbiologist and a biochemist from the British pharmaceutical firm Beecham spent a year at the center â€” to learn how to produce penicillin. Chain, who was a consultant to Beecham. Beecham soon learned how to produce this compound in large quantities. The ability to produce the penicillin nucleus on a mass scale, coupled with the earlier discovery, by chemist John C. Sheehan at MIT, of a method to add chemical side chains to this nucleus, created the framework for a new era in the history of penicillinâ€”the era of semisynthetic penicillins. Chain contributed to a number of fields in addition to penicillin research. Soon after arriving in Rome, he and his colleagues at the center began a project on carbohydrate metabolism. This research illuminated the role of insulin in some metabolic pathways in various tissues. Chain also advanced fermentation methods to produce therapeutically useful alkaloids from the ergot fungus in high yield. Chain continued this work and initiated some new projects after he moved back to England in to become chairman of the department of biochemistry at Imperial College of Science and Technology in London. He and associates in the biochemistry and chemistry departments investigated the action of fusicoccins, plant toxins that cause wilting, and they established the chemical structures of several of these toxins. Chain also helped clarify the biochemistry of the myocardium, particularly in cases where the heart was deprived of oxygen, as in cardiac arrest. The antibiotic was active against several pathogens, but it was too toxic for clinical application. Chain was active in many fields, but his greatest contribution to science and medicine was the introduction and development of penicillin. For this work he received many honorary degrees, prestigious scientific prizes, and

a knighthood. The Chemistry of Penicillin Princeton, 1953; Ballio et al, ; and a series of six articles in Proceedings of the Royal Society of London, B Section C, Perkin Transactions I Hearse and David A. An Antibiotic Produced by Pseudomonas fluorescens. Fuller et al; and a series of three papers that he published with co-workers from Imperial College in Journal of the Chemical Society: Perkin Transactions I S, de Rueck and Margaret Cameron, eds. The History of Antibiotics: A Symposium Madison, Wis. The most comprehensive biography of Chain is Ronald W. Clark, The Life of Ernst Chain: Penicillin and Beyond New York. Several sources discuss Chains work on penicillin, the most detailed of which is Howard W. The Untold Story of Penicillin Cambridge. John Patrick Swann Pick a style below, and copy the text for your bibliography.

#### Chapter 4 : Ernst Chain - Wikipedia

*A Jew who left Germany when Hitler came to power, Sir Ernst Chain was a winner, with Sir Alexander Fleming and Lord Florey, of the Nobel Prize for Physiology and Medicine in Later he was a significant figure in the use of the semi-synthetic penicillins which, from the mids onwards.*

Michael Chain, being a chemist and industrialist. He next attended the Friedrich-Wilhelm University, Berlin, where he graduated in chemistry in . In , after the access to power of the Nazi regime in Germany, he emigrated to England. Here, his first two years were spent working on phospholipids at the School of Biochemistry, Cambridge, under the direction of Sir Frederick Gowland Hopkins , for whose personality and scientific ability he came to have a great admiration. In he was invited to Oxford University where he worked in the Sir William Dunn School of Pathology, becoming, in , demonstrator and lecturer in chemical pathology. He became Professor of Biochemistry at Imperial College, University of London, in , which position he still holds. His research has covered a wide range of topics in addition to those already detailed. From to he worked on snake venoms, tumour metabolism, the mechanism of lysozyme action and the invention and development of methods for biochemical microanalysis. In he began, with H. This led to his best known work, the reinvestigation of penicillin, which had been described by Sir Alexander Fleming nine years earlier, and to the discovery of its chemotherapeutic action. Later he worked on the isolation and elucidation of the chemical structure of penicillin and other natural antibiotics. Since his research topics have included carbohydrate-amino acid relationship in nervous tissue, a study of the mode of action of insulin, fermentation technology, 6-aminopenicillanic acid and penicillinase-stable penicillins, lysergic acid production in submerged culture, and the isolation of new fungal metabolites. Professor Chain is author or co-author of many scientific papers and contributor to important monographs on penicillin and antibiotics. He was elected a Fellow of the Royal Society in . Professor Chain married Dr. Anne Beloff in . They have two sons, Benjamin and Daniel, and one daughter, Judith. Music is one of his recreations. It was later edited and republished in Nobel Lectures. To cite this document, always state the source as shown above. Chain died on August 12,

#### Chapter 5 : Ernst B. Chain - Biographical - blog.quintoapp.com

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#### Chapter 6 : The Life of Ernst Chain: Penicillin and Beyond: Ronald Clark: Bloomsbury Reader

*Ernst Boris Chain () was instrumental in the creation of penicillin, the first antibiotic drug. Ernst Boris Chain was instrumental in the creation of penicillin, the first antibiotic drug. Although the Scottish bacteriologist Alexander Fleming discovered the penicillium notatum mold in*

#### Chapter 7 : Ernst Boris Chain Facts

*The Life of Ernst Chain - Penicillin and Beyond Ronald Clark. Publisher: Bloomsbury Reader 0 1 0 Summary A Jew who left Germany when Hitler came to power, Sir Ernst Chain was a winner, with Sir Alexander Fleming and Lord Florey, of the Nobel Prize for Physiology and Medicine in*

#### Chapter 8 : THE LIFE OF ERNST CHAIN: Penicillin and Beyond by Ronald W. Clark | Kirkus Reviews

*The life of the feisty German Jew who, along with Howard Florey, moved Fleming's mold from laboratory curiosity to lifesaving drug. Biographers never cease to be fascinated by the quirks of fate and the ill-matched personalities that are the leading characters in the penicillin story. Fortunately.*

**Chapter 9 : Ernst Boris Chain Biography - Childhood, Life Achievements & Timeline**

*Read "The Life of Ernst Chain Penicillin and Beyond" by Ronald Clark with Rakuten Kobo. A Jew who left Germany when Hitler came to power, Sir Ernst Chain was a winner, with Sir Alexander Fleming and Lord Florey.*