

# The Maxwellians

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## **The Symbolic Universe** - Jeremy Gray 1999

Physics was transformed between 1890 and 1930, and this volume provides a detailed history of the era and emphasizes the key role of geometrical ideas. Topics include the application of n-dimensional differential geometry to mechanics and theoretical physics, the philosophical questions on the reality of geometry, and the nature of geometry and its connections with psychology, special relativity, Hilbert's efforts to axiomatize relativity, and Emmy Noether's work in physics.

## **The Maxwellians** - Bruce J. Hunt 2005

James Clerk Maxwell published the Treatise on Electricity and Magnetism in 1873. At his death, six years later, his theory of the electromagnetic field was neither well understood nor widely accepted. By the mid-1890s, however, it was regarded as one of the most fundamental and fruitful of all physical theories. Bruce J. Hunt examines the joint work of a group of young British physicists--G. F. FitzGerald, Oliver Heaviside, and Oliver Lodge--along with a key German contributor, Heinrich Hertz. It was these "Maxwellians" who transformed the fertile but half-finished ideas presented in the Treatise into the concise and powerful system now known as "Maxwell's theory."

## **The Great Equations: Breakthroughs in Science from Pythagoras to Heisenberg** - Robert P. Crease 2010-01-18

Shares behind-the-scenes stories for ten of the most significant equations

in human history, covering a range of topics, from Feynman's statement about Maxwell's pivotal electromagnetic equations and the influence of Newton's law of gravitation to the reason Euler's formula has been called "God's equation" and Heisenberg's uncertainty principle. 20,000 first printing.

## **A Treatise on Electricity and Magnetism** - James Clerk Maxwell 1873

## **Physics, the Human Adventure** - Gerald James Holton 2001

Of Some Trigonometric Relations -- Vector Algebra.

## **The Forgotten Genius of Oliver Heaviside** - Basil Mahon 2017

"This biography of Oliver Heaviside profiles the life of an underappreciated genius and describes his many contributions to electrical science, which proved to be essential to the future of mass communications"--

## **The Cambridge History of Science: Volume 5, The Modern Physical and Mathematical Sciences** - David C. Lindberg 2003

A new and comprehensive examination of the history of the modern physical and mathematical sciences.

## **On the Maxwellian Distribution, Symmetric Form, and Entropy Conservation for the Euler Equations** - Suresh M. Deshpande 1986

## **Symbols and Things** - Kevin Lambert 2021-10-12

In the steam-powered mechanical age of the eighteenth and nineteenth

centuries, the work of late Georgian and early Victorian mathematicians depended on far more than the properties of number. British mathematicians came to rely on industrialized paper and pen manufacture, railways and mail, and the print industries of the book, disciplinary journal, magazine, and newspaper. Though not always physically present with one another, the characters central to this book—from George Green to William Rowan Hamilton—relied heavily on communication technologies as they developed their theories in consort with colleagues. The letters they exchanged, together with the equations, diagrams, tables, or pictures that filled their manuscripts and publications, were all tangible traces of abstract ideas that extended mathematicians into their social and material environment. Each chapter of this book explores a thing, or assembling of things, mathematicians needed to do their work—whether a textbook, museum, journal, library, diagram, notebook, or letter—all characteristic of the mid-nineteenth-century British taskscape, but also representative of great change to a discipline brought about by an industrialized world in motion.

Marconi - Marc Raboy 2016-06-28

A little over a century ago, the world went wireless. Cables and all their limiting inefficiencies gave way to a revolutionary means of transmitting news and information almost everywhere, instantaneously. By means of "Hertzian waves," as radio waves were initially known, ships could now make contact with other ships (saving lives, such as on the doomed S.S. Titanic); financial markets could coordinate with other financial markets, establishing the price of commodities and fixing exchange rates; military commanders could connect with the front lines, positioning artillery and directing troop movements. Suddenly and irrevocably, time and space telescoped beyond what had been thought imaginable. Someone had not only imagined this networked world but realized it: Guglielmo Marconi. As Marc Raboy shows us in this enthralling and comprehensive biography, Marconi was the first truly global figure in modern communications. Born to an Italian father and an Irish mother, he was in many ways stateless, working his cosmopolitanism to advantage. Through a combination of skill, tenacity, luck, vision, and timing,

Marconi popularized--and, more critically, patented--the use of radio waves. Soon after he burst into public view at the age of 22 with a demonstration of his wireless apparatus in London, 1896, he established his Wireless Telegraph & Signal Company and seemed unstoppable. He was decorated by the Czar of Russia, named an Italian Senator, knighted by King George V of England, and awarded the Nobel Prize for Physics--all before the age of 40. Until his death in 1937, Marconi was at the heart of every major innovation in electronic communication, courted by powerful scientific, political, and financial interests. He established stations and transmitters in every corner of the globe, from Newfoundland to Buenos Aires, Hawaii to Saint Petersburg. Based on original research and unpublished archival materials in four countries and several languages, Raboy's book is the first to connect significant parts of Marconi's story, from his early days in Italy, to his groundbreaking experiments, to his protean role in world affairs. Raboy also explores Marconi's relationships with his wives, mistresses, and children, and examines in unsparing detail the last ten years of the inventor's life, when he returned to Italy and became a pillar of Benito Mussolini's fascist regime. Raboy's engrossing biography, which will stand as the authoritative work of its subject, proves that we still live in the world Marconi created.

Lives of Weeds - John Cardina 2021-09-15

Lives of Weeds explores the tangled history of weeds and their relationship to humans. Through eight interwoven stories, John Cardina offers a fresh perspective on how these tenacious plants came about, why they are both inevitable and essential, and how their ecological success is ensured by determined efforts to eradicate them. Linking botany, history, ecology, and evolutionary biology to the social dimensions of humanity's ancient struggle with feral flora, Cardina shows how weeds have shaped—and are shaped by—the way we live in the natural world. Weeds and attempts to control them drove nomads toward settled communities, encouraged social stratification, caused environmental disruptions, and have motivated the development of GMO crops. They have snared us in social inequality and economic instability,

infested social norms of suburbia, caused rage in the American heartland, and played a part in perpetuating pesticide use worldwide. *Lives of Weeds* reveals how the technologies directed against weeds underlie ethical questions about agriculture and the environment, and leaves readers with a deeper understanding of how the weeds around us are entangled in our daily choices.

**Topics in Industrial Mathematics** - H Neunzert 2013-06-29

Industrial Mathematics is a relatively recent discipline. It is concerned primarily with transforming technical, organizational and economic problems posed by industry into mathematical problems; "solving" these problems by approximate methods of analytical and/or numerical nature; and finally reinterpreting the results in terms of the original problems. In short, industrial mathematics is modelling and scientific computing of industrial problems. Industrial mathematicians are bridge-builders: they build bridges from the field of mathematics to the practical world; to do that they need to know about both sides, the problems from the companies and ideas and methods from mathematics. As mathematicians, they have to be generalists. If you enter the world of industry, you never know which kind of problems you will encounter, and which kind of mathematical concepts and methods you will need to solve them. Hence, to be a good "industrial mathematician" you need to know a good deal of mathematics as well as ideas already common in engineering and modern mathematics with tremendous potential for application. Mathematical concepts like wavelets, pseudorandom numbers, inverse problems, multigrid etc., introduced during the last 20 years have recently started entering the world of real applications. Industrial mathematics consists of modelling, discretization, analysis and visualization. To make a good model, to transform the industrial problem into a mathematical one such that you can trust the prediction of the model is no easy task.

**The Natural Philosophy of James Clerk Maxwell** - P. M. Harman 2001-02-22

This book examines James Clerk Maxwell, creator of the electromagnetic theory of light and kinetic theory of gases.

**Introduction to Plasma Physics and Controlled Fusion** - Francis F. Chen 2013-03-09

TO THE SECOND EDITION In the nine years since this book was first written, rapid progress has been made scientifically in nuclear fusion, space physics, and nonlinear plasma theory. At the same time, the energy shortage on the one hand and the exploration of Jupiter and Saturn on the other have increased the national awareness of the important applications of plasma physics to energy production and to the understanding of our space environment. In magnetic confinement fusion, this period has seen the attainment of a Lawson number  $n\tau E$  of  $2 \times 10^{21}$  cm<sup>-3</sup> sec in the Alcator tokamaks at MIT; neutral-beam heating of the PLT tokamak at Princeton to  $K_{Ti} = 6.5$  keV; increase of average  $\beta$  to 3%-5% in tokamaks at Oak Ridge and General Atomic; and the stabilization of mirror-confined plasmas at Livermore, together with injection of ion current to near field-reversal conditions in the 2XIIIS device. Invention of the tandem mirror has given magnetic confinement a new and exciting dimension. New ideas have emerged, such as the compact torus, surface-field devices, and the EBT mirror-torus hybrid, and some old ideas, such as the stellarator and the reversed-field pinch, have been revived. Radiofrequency heating has become a new star with its promise of dc current drive. Perhaps most importantly, great progress has been made in the understanding of the MHD behavior of toroidal plasmas: tearing modes, magnetic VII-VIII islands, and disruptions.

[An Introduction to Electrodynamics](#) - P. A. Davidson 2019-02-18

*An Introduction to Electrodynamics* provides an excellent foundation for those undertaking a course on electrodynamics, providing an in-depth yet accessible treatment of topics covered in most undergraduate courses, but goes one step further to introduce advanced topics in applied physics, such as fusion plasmas, stellar magnetism and planetary dynamos. Some of the central ideas behind electromagnetic waves, such as three-dimensional wave propagation and retarded potentials, are first explored in the introductory background chapters and explained in the much simpler context of acoustic waves. The inclusion of two chapters on magnetohydrodynamics provides the

opportunity to illustrate the basic theory of electromagnetism with a wide variety of physical applications of current interest. Davidson places great emphasis on the pedagogical development of ideas throughout the text, and includes many detailed illustrations and well-chosen exercises to complement the material and encourage student development.

*Hertz and the Maxwellians* - James G. O'Hara 1987

"Heinrich Hertz's electrodynamic investigations, culminating in the demonstration of the finite velocity of propagation of electromagnetic wave radiation in 1887-88 were, like the discovery of the electron in the following decade, events of major significance in the history of science and technology. The importance of Hertz's achievement lay, in the first instance, in the verification of James Clerk Maxwell's electromagnetic wave theory. The ground for Hertz's investigations had however been prepared by the group of British and Irish physicists - the "Maxwellians" - who had explored Maxwell's theory and partially anticipated Hertz's discoveries. This book documents and discusses the prediction and discovery of electromagnetic wave radiation by the Maxwellians and Hertz between 1873 and 1894 using the published writings and the unpublished letters and manuscripts of those concerned. For the historian of science and technology the work contains valuable primary source material and represents an edition of Hertz's correspondence in English or with scientists in the English-speaking world. For the physicist, engineer or general reader the book provides a lucid and authoritative account of this fundamental discovery which has proved to be the basis of a major part of telecommunications engineering in the twentieth century." -- dust jacket.

*Einstein's Miraculous Year* - Albert Einstein 2021-05-11

Five extraordinary papers by Albert Einstein that transformed physics, edited and introduced by John Stachel and with a foreword by Nobel laureate Roger Penrose After 1905, Einstein's miraculous year, physics would never be the same again. In those twelve months, Einstein shattered many cherished scientific beliefs with five extraordinary papers that would establish him as the world's leading physicist. This book brings those papers together in an accessible format. The best-

known papers are the two that founded special relativity: On the Electrodynamics of Moving Bodies and Does the Inertia of a Body Depend on Its Energy Content? In the former, Einstein showed that absolute time had to be replaced by a new absolute: the speed of light. In the second, he asserted the equivalence of mass and energy, which would lead to the famous formula  $E = mc^2$ . The book also includes On a Heuristic Point of View Concerning the Production and Transformation of Light, in which Einstein challenged the wave theory of light, suggesting that light could also be regarded as a collection of particles. This helped to open the door to a whole new world—that of quantum physics. For ideas in this paper, he won the Nobel Prize in 1921. The fourth paper also led to a Nobel Prize, although for another scientist, Jean Perrin. On the Movement of Small Particles Suspended in Stationary Liquids Required by the Molecular-Kinetic Theory of Heat concerns the Brownian motion of such particles. With profound insight, Einstein blended ideas from kinetic theory and classical hydrodynamics to derive an equation for the mean free path of such particles as a function of the time, which Perrin confirmed experimentally. The fifth paper, A New Determination of Molecular Dimensions, was Einstein's doctoral dissertation, and remains among his most cited articles. It shows how to calculate Avogadro's number and the size of molecules. These papers, presented in a modern English translation, are essential reading for any physicist, mathematician, or astrophysicist. Far more than just a collection of scientific articles, this book presents work that is among the high points of human achievement and marks a watershed in the history of science. Coinciding with the 100th anniversary of the miraculous year, this new paperback edition includes an introduction by John Stachel, which focuses on the personal aspects of Einstein's youth that facilitated and led up to the miraculous year.

*Electromagnetic Theory* - Oliver Heaviside 1893

[Conquering the Electron](#) - Derek Cheung 2020-03-01

Conquering the Electron offers readers a true and engaging history of the world of electronics, beginning with the discoveries of static

electricity and magnetism and ending with the creation of the smartphone and the iPad. This book shows the interconnection of each advance to the next on the long journey to our modern-day technologies. Exploring the combination of genius, infighting, and luck that powered the creation of today's electronic age, *Conquering the Electron* debunks the hero worship so often plaguing the stories of great advances. Want to know how AT&T's Bell Labs developed semiconductor technology—and how its leading scientists almost came to blows in the process? Want to understand how radio and television work—and why RCA drove their inventors to financial ruin and early graves? *Conquering the Electron* offers these stories and more, presenting each revolutionary technological advance right alongside blow-by-blow personal battles that all too often took place.

*From Falling Bodies to Radio Waves* - Emilio Segrè 2012-08-07

This chronicle by a renowned physicist traces the development of scientific thought from the works of Galileo, Huygens, and Newton to discoveries by Maxwell, Boltzmann, and Gibbs. 1984 edition.

*The Martians of Science* - István Hargittai 2008

If science has the equivalent of a Bloomsbury group, it is the five men born at the turn of the twentieth century in Budapest: Theodore von Kármán, Leo Szilard, Eugene Wigner, John von Neumann, and Edward Teller. From Hungary to Germany to the United States, they remained friends and continued to work together and influence each other throughout their lives. As a result, their work was integral to some of the most important scientific and political developments of the twentieth century. István Hargittai tells the story of this remarkable group: Wigner won a Nobel Prize in theoretical physics; Szilard was the first to see that a chain reaction based on neutrons was possible, initiated the Manhattan Project, but left physics to try to restrict nuclear arms; von Neumann could solve difficult problems in his head and developed the modern computer for more complex problems; von Kármán became the first director of NASA's Jet Propulsion Laboratory, providing the scientific basis for the U.S. Air Force; and Teller was the father of the hydrogen bomb, whose name is now synonymous with the controversial "Star

Wars" initiative of the 1980s. Each was fiercely opinionated, politically active, and fought against all forms of totalitarianism. Hargittai, as a young Hungarian physical chemist, was able to get to know some of these great men in their later years, and the depth of information and human interest in *The Martians of Science* is the result of his personal relationships with the subjects, their families, and their contemporaries. *Lightspeed* - John C. H. Spence 2019-10-14

This is the human story and adventures of the great scientists who measured the speed of light -- which takes eight minutes to get here from the sun, so that when we look at the stars we are looking back in time. The book narrates how, since the ancient Greeks, scientists from Faraday, Maxwell, Fizeau and Michelson struggled to understand how light can travel through the vacuum of outer space, unless it is filled with a ghostly invisible vortex Aether foam. Thereader moves from Galileo's observations of the eclipses of Jupiter's moon for navigation, to Einstein's theories and his equation  $E = mc^2$ , and all the quantum weirdness which followed. Space probes, the Transit of Venus expeditions, the discovery of radio, optics and satellite navigation, and the amazing scientific instruments built to detect the Aether wind are described.

**Wranglers and Physicists** - Peter Michael Harman 1985

**Strange Beauty** - George Johnson 2010-09-29

With a New Afterword "Our knowledge of fundamental physics contains not one fruitful idea that does not carry the name of Murray Gell-Mann." -Richard Feynman Acclaimed science writer George Johnson brings his formidable reporting skills to the first biography of Nobel Prize-winner Murray Gell-Mann, the brilliant, irascible man who revolutionized modern particle physics with his models of the quark and the Eightfold Way. Born into a Jewish immigrant family on New York's East 14th Street, Gell-Mann's prodigious talent was evident from an early age--he entered Yale at 15, completed his Ph.D. at 21, and was soon identifying the structures of the world's smallest components and illuminating the elegant symmetries of the universe. Beautifully balanced in its portrayal of an extraordinary and difficult man, interpreting the concepts of

advanced physics with scrupulous clarity and simplicity, *Strange Beauty* is a tour-de-force of both science writing and biography.

[Energy and Empire](#) - Crosbie Smith 1989-10-26

This study of Lord Kelvin, the most famous mathematical physicist of 19th-century Britain, delivers on a speculation long entertained by historians of science that Victorian physics expressed in its very content the industrial society that produced it.

**Faraday, Maxwell, and the Electromagnetic Field** - Nancy Forbes 2014-03-11

The story of two brilliant nineteenth-century scientists who discovered the electromagnetic field, laying the groundwork for the amazing technological and theoretical breakthroughs of the twentieth century. Two of the boldest and most creative scientists of all time were Michael Faraday (1791-1867) and James Clerk Maxwell (1831-1879). This is the story of how these two men - separated in age by forty years - discovered the existence of the electromagnetic field and devised a radically new theory which overturned the strictly mechanical view of the world that had prevailed since Newton's time. The authors, veteran science writers with special expertise in physics and engineering, have created a lively narrative that interweaves rich biographical detail from each man's life with clear explanations of their scientific accomplishments. Faraday was an autodidact, who overcame class prejudice and a lack of mathematical training to become renowned for his acute powers of experimental observation, technological skills, and prodigious scientific imagination. James Clerk Maxwell was highly regarded as one of the most brilliant mathematical physicists of the age. He made an enormous number of advances in his own right. But when he translated Faraday's ideas into mathematical language, thus creating field theory, this unified framework of electricity, magnetism and light became the basis for much of later, 20th-century physics. Faraday's and Maxwell's collaborative efforts gave rise to many of the technological innovations we take for granted today - from electric power generation to television, and much more. Told with panache, warmth, and clarity, this captivating story of their greatest work - in which each played an equal part - and their

inspiring lives will bring new appreciation to these giants of science.

*Pursuing Power and Light* - Bruce J. Hunt 2010-04-08

Hunt translates his often-demanding material into engaging and accessible language suitable for undergraduate students of the history of science and technology.

[Pursuing Power and Light](#) - Bruce J. Hunt 2010-04-08

In the nineteenth century, science and technology developed a close and continuing relationship. The important advancements in physics were deeply rooted in the new technologies of the steam engine, the telegraph, and electric power and light. The author explores how the leading technologies of the industrial age helped reshape modern physics.

**Tesla** - W. Bernard Carlson 2015-04-27

Nikola Tesla was a major contributor to the electrical revolution that transformed daily life at the turn of the twentieth century. His inventions, patents, and theoretical work formed the basis of modern AC electricity, and contributed to the development of radio and television. Like his competitor Thomas Edison, Tesla was one of America's first celebrity scientists, enjoying the company of New York high society and dazzling the likes of Mark Twain with his electrical demonstrations. An astute self-promoter and gifted showman, he cultivated a public image of the eccentric genius. Even at the end of his life when he was living in poverty, Tesla still attracted reporters to his annual birthday interview, regaling them with claims that he had invented a particle-beam weapon capable of bringing down enemy aircraft. Plenty of biographies glamorize Tesla and his eccentricities, but until now none has carefully examined what, how, and why he invented. In this groundbreaking book, W. Bernard Carlson demystifies the legendary inventor, placing him within the cultural and technological context of his time, and focusing on his inventions themselves as well as the creation and maintenance of his celebrity. Drawing on original documents from Tesla's private and public life, Carlson shows how he was an "idealist" inventor who sought the perfect experimental realization of a great idea or principle, and who skillfully sold his inventions to the public through mythmaking and

illusion. This major biography sheds new light on Tesla's visionary approach to invention and the business strategies behind his most important technological breakthroughs.

**The Maxwellians** - Bruce J. Hunt 1991

James Clerk Maxwell published the *Treatise on Electricity and Magnetism* in 1873. At his death, six years later, his theory of the electromagnetic field was neither well understood nor widely accepted. By the mid-1890s, however, it was regarded as one of the most fundamental and fruitful of all physical theories. Bruce J. Hunt examines the joint work of a group of young British physicists--G. F. FitzGerald, Oliver Heaviside, and Oliver Lodge--along with a key German contributor, Heinrich Hertz. It was these "Maxwellians" who transformed the fertile but half-finished ideas presented in the *Treatise* into the concise and powerful system now known as "Maxwell's theory."

**The Man Who Changed Everything** - Basil Mahon 2015-04-08

This is the first biography in twenty years of James Clerk Maxwell, one of the greatest scientists of our time and yet a man relatively unknown to the wider public. Approaching science with a freshness unbound by convention or previous expectations, he produced some of the most original scientific thinking of the nineteenth century — and his discoveries went on to shape the twentieth century.

**Frankenstein** - Mary Shelley 2017-04-28

The original 1818 text of Mary Shelley's classic novel, with annotations and essays highlighting its scientific, ethical, and cautionary aspects. Mary Shelley's *Frankenstein* has endured in the popular imagination for two hundred years. Begun as a ghost story by an intellectually and socially precocious eighteen-year-old author during a cold and rainy summer on the shores of Lake Geneva, the dramatic tale of Victor Frankenstein and his stitched-together creature can be read as the ultimate parable of scientific hubris. Victor, "the modern Prometheus," tried to do what he perhaps should have left to Nature: create life. Although the novel is most often discussed in literary-historical terms—as a seminal example of romanticism or as a groundbreaking early work of science fiction—Mary Shelley was keenly aware of

contemporary scientific developments and incorporated them into her story. In our era of synthetic biology, artificial intelligence, robotics, and climate engineering, this edition of *Frankenstein* will resonate forcefully for readers with a background or interest in science and engineering, and anyone intrigued by the fundamental questions of creativity and responsibility. This edition of *Frankenstein* pairs the original 1818 version of the manuscript—meticulously line-edited and amended by Charles E. Robinson, one of the world's preeminent authorities on the text—with annotations and essays by leading scholars exploring the social and ethical aspects of scientific creativity raised by this remarkable story. The result is a unique and accessible edition of one of the most thought-provoking and influential novels ever written. Essays by Elizabeth Bear, Cory Doctorow, Heather E. Douglas, Josephine Johnston, Kate MacCord, Jane Maienschein, Anne K. Mellor, Alfred Nordmann

*A Dynamical Theory of the Electromagnetic Field* - James C. Maxwell  
1996-12-03

**Imperial Science** - Bruce J. Hunt 2021-01-07

Explores how Britain's global cable network became both the 'nervous system' of its Empire and the key to electrical physics.

**Oliver Heaviside** - Paul J. Nahin 2002-11-13

Acclaimed biography of the pioneer of modern electrical theory featuring a new preface by author. "He was a man who often was incapable of conducting himself properly in the most elementary social interactions. His only continuing contacts with women were limited to his mother, nieces, and housekeepers. He was a man who knew the power of money and desired it, but refused to work for it, preferring to live off the sweat of his family and long-suffering friends, whom he often insulted even as they paid his bills."—Excerpt from the book This, then, was Oliver Heaviside, a pioneer of modern electrical theory. Born into a low social class of Victorian England, Heaviside made advances in mathematics by introducing the operational calculus; in physics, where he formulated the modern-day expressions of Maxwell's Laws of electromagnetism; and in

electrical engineering, through his duplex equations. With a new preface by the author, this acclaimed biography will appeal to historians of technology and science, as well as to scientists and engineers who wish to learn more about this remarkable man.

**History of Wireless** - T. K. Sarkar 2006-01-30

Important new insights into how various components and systems evolved. Premised on the idea that one cannot know a science without knowing its history, *History of Wireless* offers a lively new treatment that introduces previously unacknowledged pioneers and developments, setting a new standard for understanding the evolution of this important technology. Starting with the background-magnetism, electricity, light, and Maxwell's Electromagnetic Theory-this book offers new insights into the initial theory and experimental exploration of wireless. In addition to the well-known contributions of Maxwell, Hertz, and Marconi, it examines work done by Heaviside, Tesla, and passionate amateurs such as the Kentucky melon farmer Nathan Stubblefield and the unsung hero Antonio Meucci. Looking at the story from mathematical, physics, technical, and other perspectives, the clearly written text describes the development of wireless within a vivid scientific milieu. *History of Wireless* also goes into other key areas, including: The work of J. C. Bose and J. A. Fleming German, Japanese, and Soviet contributions to physics and applications of electromagnetic oscillations and waves Wireless telegraphic and telephonic development and attempts to achieve transatlantic wireless communications Wireless telegraphy in South Africa in the early twentieth century Antenna development in Japan: past and present Soviet quasi-optics at near-mm and sub-mm wavelengths The evolution of electromagnetic waveguides The history of phased array antennas Augmenting the typical, Marconi-centered approach, *History of Wireless*

fills in the conventionally accepted story with attention to more specific, less-known discoveries and individuals, and challenges traditional assumptions about the origins and growth of wireless. This allows for a more comprehensive understanding of how various components and systems evolved. Written in a clear tone with a broad scientific audience in mind, this exciting and thorough treatment is sure to become a classic in the field.

[On the Maxwellian Distribution, Symmetric Form, and Entropy Conservation for the Euler Equations](#) - Suresh M. Deshpande 1986

*Engineering and the Mind's Eye* - Eugene S. Ferguson 1994-03-29

In this insightful and incisive essay, Eugene Ferguson demonstrates that good engineering is as much a matter of intuition and nonverbal thinking as of equations and computation. He argues that a system of engineering education that ignores nonverbal thinking will produce engineers who are dangerously ignorant of the many ways in which the real world differs from the mathematical models constructed in academic minds.

*New Scientist* - 1987-10-29

*New Scientist* magazine was launched in 1956 "for all those men and women who are interested in scientific discovery, and in its industrial, commercial and social consequences". The brand's mission is no different today - for its consumers, *New Scientist* reports, explores and interprets the results of human endeavour set in the context of society and culture.

**James Clerk Maxwell** - Raymond Flood 2014

James Clerk Maxwell (1831 -1879) was one of the most important mathematical physicists of all time. In scientific terms his immortality is enshrined in electromagnetism and Maxwell's equations, but as this book shows, there was much more to Maxwell than electromagnetism, both in terms of his science and his wider life.