



# The Electric Life of Michael Faraday

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## **The Electric Life of Michael Faraday** Alan W. Hirshfeld

The Electric Life of Michael Faraday dramatizes Michael Faraday's passion for understanding the dynamics of nature. He manned the barricades against superstition and pseudoscience, and pressed for a scientifically literate populace years before science had been deemed worthy of common study. A friend of Charles Dickens and an inspiration to Thomas Edison, the deeply religious Faraday sought no financial gain from his discoveries, content to reveal God's presence through the design of nature. Faraday speaks to us today through the prose of his letters and journals. In *The Electric Life of Michael Faraday*, Alan Hirshfeld presents an intimate and memorable portrait of an icon of science, making Faraday's most significant discoveries about electricity and magnetism readily understandable, and immortalizing his momentous contributions to the modern world.

## **The Electric Life of Michael Faraday Details**

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## **From Reader Review The Electric Life of Michael Faraday for online ebook**

### **John Petrocelli says**

Review: Moderately complete account of the scientist's life - missing details. Much of the book includes direct quotes from Faraday's writings.

Favorite Quote: "Twenty-four hours provided insufficient for the tide of Faraday's daily ponderings and activities, a fact he lamented to Abbott: What is the longest, and the shortest thin in the world: the swiftest, and the most slow: the most divisible and the most extended: the least valued and the most regretted: without which nothing can be done: which devours all that is small: and gives life and spirits to every thing that is great? It is that Good Sir, the want of which has till now delayed my answer to your welcome letter. It is what the Creator has thought of such value as never to bestow on us mortals two of the minutest portions of it at once. It is that which with me is at the instant very pleasingly employed. It is Time" (pp. 39-40).

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### **Sherwood Belangia says**

The man is a fascinating case study for the intellectual eros. I found this book quite inspiring.

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### **Jason Furman says**

If you read just one biography of Michael Faraday make it this one.

Actually I haven't read any others and probably won't. But this was one well worth it. As Dickensian as the Wire, but more David Copperfield than Little Dorrit. Faraday picked up science by browsing books in the store that he worked in. And then worked his way up from essentially an errand boy to one of the world's premier experimentalist in electricity and magnetism.

Hirshfeld does a nice job mixing the life of Faraday with his science.

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### **Scott says**

This was an interesting read. I enjoyed the story portions of the book, but lost interest in the math and science portions.

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### **Lindsay says**

A solid, well-written biography, but nothing riveting.

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### **Andrew Ribeiro says**

This was a wonderful biography about a wonderful man, Michael Faraday. Michael Faraday was an experimental genius and paragon to those who seek to understand nature. The most intriguing facet of Faraday's ethos was his acceptance and appreciation of human inadequacy; he therefore made self-improvement a constant element of his life. We can all strive to have this understanding.

Another element of Faraday's being that I found extraordinary was his inability to do or understand high level mathematics used by his contemporaries. In Faraday's time mathematics dominated the natural sciences; as they do now. It is highly interesting that he was able to make landmark discoveries devoid of the immense mathematical arsenal used by his contemporaries. This is a prime example of human intuition and our ever present inability to understand it. Of course mathematics is necessary, useful, and practical. Many people have not heard of Faraday, but have heard of Maxwell and his differential equations. Maxwell's work is based directly on the intuition of Michel Faraday. I have gathered the following understanding from this: Intuition drives discovery, mathematics describes it.

He did not seek fame, money, or prestige, he simply wanted to understand nature. He is my ideal conception of a man.

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### **LillyBooks says**

I checked out this book for research purposes, and I never had plans to read it all. The section I did read was well written, a detailed but clear explanation of both the physicist's scientific tinkering and personal state during the time period I was interested in.

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### **Maria says**

Sweet biography of a humble, self-taught, brilliant man. I especially enjoyed learning that Faraday spoke out against psuedoscience during the 19th century craze for table knocking and seances, using it as a way to advocate for elementary and middle school science education during a time when science was only taught at the college level.

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### **Steve Gross says**

Good biography, obviously written with affection and respect. A little too much quoting of Faraday's original words.

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## **Roo Phillips says**

This is a toss up between 3 and 4 stars. The author did an excellent job at describing a nice balance between Faraday's personal life, and his professional accomplishments. There are times when long excerpts from letters or other primary sources are just cut and pasted, and you get the feel like they are mostly included to lengthen the book. But getting through the fluff, there is an interesting story about (arguably) the greatest scientist to follow Newton. At his core, he is a pure experimentalist. He had a brilliant knack for devising experiments to test the natural world, and make sense of the results. Thanks to Faraday, we properly understand and can harness electricity and magnetism. There's nothing too controversial in his personal life, but this book would be interesting for anyone with a curiosity about the history of electricity and magnetism.

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## **Ellen says**

Some parts of this book are a bit dry and pedantic. Although Faraday was a contributor to our knowledge of electric fields, his life was hardly "electric". He was an oddball who liked being in the lab more than being with people. The facts about his life and work were interesting.

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## **Brian Carpenter says**

The picture that Hirshfeld paints of Michael Faraday is an amazing portrait of a self-taught man whose love for nature and discovery drove him to become one of the greatest scientists of his time. Faraday's approach to science is one of intense and methodical experimentation, (un)hindered by the intense mathematical framework that characterized much of the frontiers of the fields he studied. In this way, he lays a path that anyone with the same desire and passion that he had can follow. This biography benefited greatly from Faraday's own words, found in his journals and writings. They reveal a man who turned his intense personal curiosity and desire to know the truth of nature into a drive to better the lot of every person through the application of the scientific ideas he unearthed. The contributions that Faraday made to our world cannot be understated, as the entirety of modern society rests on the foundations of the research he pioneered.

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## **Connie says**

This is a fascinating book that is almost more about Faraday's experiments than Faraday himself. It goes through much of his experimentation in great technical detail. This would make a good read for someone with a high interest level in electromagnetism and the struggle to get to a more modern understanding of it.

I enjoyed learning about Faraday. What a classy guy! He knew his limitations and weaknesses, acknowledging them and working within them but not letting them stop him. He didn't seek public accolades, even going so far as to reject high positions that were offered. He had an impressive level of humility and an impressive amount of knowledge for someone essentially self-taught in the sciences. I definitely want to be more like Faraday when I grow up. :)

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## **K. Blaha says**

Michael Faraday is the man who showed that light, electricity, and magnetism were interconnected forces. The farad is named after him; you know a scientist is important when they've got their own unit. He had no formal math training or university education. He made his discoveries through dogged experimentation, humility, and curiosity. And because he was the son of a blacksmith, he almost didn't even get the chance.

*The Electric Life of Michael Faraday* is an excellent professional biography of Faraday\*. Hirshfeld, a physicist, details Faraday's motivations in addition to his discoveries. We learn about the books, people and thoughts that motivated Faraday. We see how Faraday coped with the endless failures that precede an experimental success. We also see how Faraday fought for his ideas against the incorrect prevailing notions of the day. We get all this in a compact and readable 200 pages. (The Cosmos episode "The Electric Boy", covers many of the facts of Faraday's life, though less of the motivation, and is an excellent companion to this book. And it's free to stream on Netflix!)

The way we are taught science as children is so different from the way science comes into being. For example, the power of the electron was harnessed well before it was discovered in 1897. Volta invented the battery in 1800; the dynamo, which converted mechanical energy into electricity, was built in 1832. Scientists like Humphry Davy isolated and named elements decades and centuries before we had any idea what made elements different. When a scientist does science today, they also have incomplete information. We learn science as a set of facts and rules, rather than the procedures for learning those facts and rules. *The Electric Life* excellently illustrates the difference. This book, accompanied with some simple experiments and videos, could make a rich and beautiful teaching example.

Hirshfeld also touches on a social issue that's as relevant today as it was in Faraday's time: scientific literacy. Speaking about the Victorian pseudoscience of table-moving, Faraday said

*I do not object to table-moving itself... though a very unpromising subject for experiment; but I am opposed to the unwillingness of its advocates to investigate; their boldness to assert; the credulity of the lookers-on; their desire that the reserved and cautious objector should be in error; and I wish, by calling attention to these things, to make the general want of mental discipline and education manifest.*

In Faraday's day, there was no science education. Today, I would argue that while we teach scientific fact, we still don't teach enough scientific reasoning. The above statement could apply to vaccines, global warming, GMOs, evolution, among others.

I would have liked to learn more about Faraday's personal life. We learn almost nothing about Faraday's wife Sarah, or anyone else in his family, or whether he even had children (he didn't). But again, the book is short, and does such a good job with its chosen issues that this is more of an observation than a criticism.

I whole heartedly recommend this book to anyone, scientist or not. You'll learn about an interesting man of history. You'll learn how science happens now and two centuries ago. And I think you'll simply enjoy it.

\* I should note that my copy was an advance reading copy from a used book store, so it may vary from the final book in small details.

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## **Jennifer says**

This was a decent overview of Michael Faraday's life. Faraday made many pivotal discoveries in the field of electromagnetism (he basically started it all!). He was a strong Christian, a humble and graceful man, and someone who accomplished much in the science world. Our world of technology has much to thank Faraday for.

The writing was pretty good and this book kept my interest all the way through, but it wasn't fantastic. Or maybe it was just that I got lost (and bored) sometimes in the parts about his scientific discoveries.

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