



A Chemical History of a Candle

Michael Faraday

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The greatest experimental scientist Michael Faraday delivered these six lectures at London's Royal Institution. Their subjects include the components, function, and weight of the atmosphere; capillary attraction; the carbon content in oxygen and living bodies; respiration and its analogy to the burning of a candle; and much more. Numerous illustrations.

A Chemical History of a Candle Details

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From Reader Review A Chemical History of a Candle for online ebook

Phillip Johnson says

Amazing that so much of the combustion processes known today were understood approaching now 300 years ago.

Some of the language is scientifically out of date and a few experiments were a bit to follow in writing. So a reading of the lectures should be brisk, capturing the main points.

Krista says

I want someone to recreate these lectures; they were fun to read but my feeble mind needs visual upon which to latch. Bill Nye, are you reading this?

King'Samson David Samson Dawit says

This was a great read that went from a simple candle to modern classroom chemistry lab ? of a candle with elements and gasses.

Matt says

Difficult to visualize all the experiments being described, though Bill Hammack's YouTube videos help in this regard.

Amar Kamat says

I had to read this book for a senior-level combustion class that I took some years ago. Through the simple example of a candle and using easy-to-follow arguments, Faraday is able to deduce the physics involved around the flame (the capillary action of the wick, the convection currents, the combustion inside the flame) and boil it down to the level of laymen (this book is a collection of lectures he gave to children to popularize science in his day). Faraday had minimal mathematical training, and was more "visual" in his thinking and arguments (like Einstein). This book offers a fascinating insight into the mind of arguably the best experimental physicist we have known.

Almudena says

Las conferencias debieron de ser espectaculares en su tiempo. Como libro, resulta un poco difícil seguir la argumentación, debido a la pérdida de contexto y a la diferencia de épocas. Pero es una idea bonita. Habría que volver a llevarla a un escenario, actualizada.

Chris Hart says

My New Year's non-resolution was to read the Harvard "Great Books". I picked this one up because it was the shortest. Mass communication has moved on from Dr Faraday and from the Great Books. Reading this was like reading a transcript of a youtube video. I'm sure it was fascinating to see his lectures in person and the experiments he demonstrated. In print...not so much. And candles were obviously much more important in the 19th century than they are now, when I use them to scent the air in my home and not at all for light.

Meredith says

It's easy to forget that until the invention of the electric lamp, most of human history survived by candlelight. I'd recommend this to any chemistry geek like me. The most remarkable thing about this book is that it contains detailed demonstrations of laboratory-scale experiments, most of which would be considered toxic and dangerous today. The section on non-ferrous extractive metallurgy is fascinating and it's a pity that the book doesn't include the Pt-Pb stability diagram.

Unfortunately, despite what it says on the eBook cover, my (free) Amazon download copy doesn't include the illustrations. I have since found free PDF reprints on the web that include the original figures.

Roy Lotz says

I wish I could rate this book higher, but I can't. Faraday is certifiably awesome, and it would definitely be worth a trip in a time machine to have seen his lectures. But, for me, reading them fell a little flat.

This was partially my fault, as I read a copy with no pictures, and this book would have been greatly improved by some illustrations. Nonetheless, I found it difficult and dry to follow page after page of descriptions of demonstrations—demonstrations that would have been both easy-to-follow and entertaining if seen in the flesh. A more conventional, didactic style would have made for a more pleasant read.

Again, this is not Faraday's fault, as he designed these notes to accompany live demonstrations. And when his personality shines through in the lectures, you get a glimpse of a passionate, affable, and profound mind.

Sampreet says

This book was mentioned in Richard Feynman's The Meaning Of It All:

And then electricity, the forces of attraction, of plus and minus, are so strong that in any normal substance all the pluses and minuses are carefully balanced out, everything pulled together with everything else. For a long time no one even noticed the phenomenon of electricity, except once in a while when they rubbed a piece of amber and it attracted a piece of paper. And yet today we find, by playing with these things, that we have a tremendous amount of machinery inside. Yet science is still not thoroughly appreciated.

To give an example, I read Faraday's Chemical History of a Candle, a set of six Christmas lectures for children. The point of Faraday's lectures was that no matter what you look at, if you look at it closely enough, you are involved in the entire universe. And so he got, by looking at every feature of the candle, into combustion, chemistry, etc...

This book is a transcript of the lecture, yet the language and the explanation is brilliant! Unfortunately the copy I read didn't have the illustration figures, try and find one. It should make the learning more fruitful.

Will definitely revisit this book.

Aida says

A series of six lectures given by the natural philosopher Michael Faraday, in which he describes what happens when a candle is lit. Written in 19th-century English, it is not as clear or precise as science books written today, but I really enjoyed it because it was lovely to take something so small and everyday as a candle and break down everything that happens with it, from how they are made to the carbon dioxide (or carbonic acid) that is produced in combustion. He even links together the combustion of a candle and human inhalation/exhalation. The knowledge that he displays is incomplete and sometimes told in a weirdly romantic fashion (especially the last paragraph), but mostly this is what I have come to expect from older science books.

A good book for a beginner and someone interested in the history of science.

Mukta says

An amazing account of the life of a candle! Considering this series of lectures and demonstrations took place in the 17th century, the noteworthy aspect is the variety and the ingenuity of the experiments that were devised to analyse the combustion process that occurs in an otherwise seemingly mundane candle. The candle, merely a light provider with so many complexities up its waxy sleeve. The language used is of a very quaint style; now would be considered unscientific. The fact that Carbon-di-oxide is called carbonic oxide, makes me realise how far science has progressed in all kinds of ways- in the way experiments and findings are presented. After reading this book, it makes me want to go back to the 17th century era to witness Faraday demonstrating these experiments to the public. In the last lecture, Faraday concludes with a philosophical thought comparing all of us to candles. All I can say is, Alere Falammam!

Bradley says

You know when you get that burning idea that says, "Oh, Lordy, I wish I had been there for those science lectures?"

Well, HERE YOU GO.

Honestly, though, this is 1861 with the actual Michael Faraday of the Faraday cages for dispersing EM currents, although he doesn't go into any of that here. These classroom lectures DO come with some really great chemical breakdowns of everything surrounding a candle all the way to some really cool metallurgy experiments, from combustion to purification, all the way to platinum.

I was particularly impressed with the means and methods he shows us how to determine the weight of elements and how to determine so much more. It's all perfectly understandable building blocks but putting them all together in this way is damn creative and fascinating. I mean, It's SCIENCE, Baby!

Never mind the oldschool measurement systems, it's still clear and everything is fairly easily convertible. I keep thinking that this would be a fantastic book to have with us if we should ever fall into another dark age. It's a perfect stepping stone to regaining lost knowledge once we slip back into the bronze age. It even gives us chemical batteries, explosives, and suction cups! All the things we absolutely need in the bathroom! :)

It's not quite as delightful a science text as some of our more modern authors, but street cred and great explanations go a LONG way. I totally recommend this for chemistry nerds.

Rohit says

This book is 10x better as a video, as it is close to a transcript. Concepts are interesting, however the format of this book is not the best way to consume these insights.

Samuel says

<3
