

This Month's Stiff: Hans Christian Oersted

Entered Mortal Coil: 14 August 1777

Assumed Room Temperature: 9 March 1851

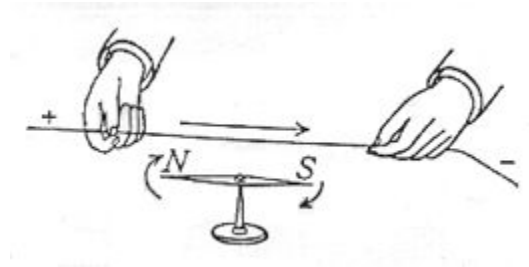


“Big Compass Needle, Ain't it?”

The fundamental relationship between magnetism and electricity is sometimes taken for granted. The steps to electrical understanding were incremental. Our current state of electronic technology is built upon the shoulders of many men---yes, men. If someone can find me a dudette who was instrumental in the history of electricity or electronics, I would gladly write a short treatise on the lass. Note, however, that the young lady (or ladies) who kept Ben Franklin or Marconi company, for instance, would not count in this context. Merely assisting the great mind in his work is not proof enough. So now that we've ruffled a few liberated feathers by being blatantly sexist in this opening paragraph, lets get on to the business of telling you kind readers a little about Hans.

Hans was born on the Island of Langeland. His father, Soren Christian, was a pharmacist. The old man was fairly well to do, apparently, and had the funds necessary to send young Hans and his brother Anders to Copenhagen in 1793 in order to take an entrance examination for the university. Both passed. In deference and in honor of his father, Hans took up the study of pharmacology. By 1800, with pharmacology degree in hand and a thorough understanding of drugs in his mind, Hans turned his energies to the new science of electricity. If there was ever a more dramatic change in interests, this particular instance fits the bill! He dabbled with it off and on for the better part of 20 years, and in the process made quite a name for himself in learned circles for other endeavors. So industrious was Hans that he was appointed Secretary to the Royal Danish Academy of Sciences and Letters in 1815.

The experiment that put Oersted's name in the history books was fiendishly simple by today's standards, and can be reproduced with ease. Scientists of the era had an inkling that electricity and magnetism were inexorably linked together, but no one had devised a means to prove the hypothesis. Actually, Hans' discovery was serendipitous, as he was playing around with electrical currents in the laboratory by using a Voltaic Pile (remember Mr. Volta?), when he noticed that a nearby compass needle deflected. He repeated the exercise, and noted a compass needle deflection each time. By reversing the current direction, the compass needle would deflect in the opposite direction. Hans also noted that no deflection took place when the wire was held at approximately right angles to the needle.



Oersted's Experiment

It was left to the work of Ampere and other scientists to quantify the relationship between electrical current and magnetism mathematically. In his honor, the CGS unit of magnetic field strength, the **Oersted**, denoted by the symbol **Oe**, was named after him.

References:

<http://chem.ch.huji.ac.il/~eugeniik/history/oersted.htm>

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