

## Thomas Craig (1853 – 1900)

Thomas Craig was born on December 20, 1853 in Pittston, PA. His father was a Scottish mining engineer who immigrated to Pennsylvania. His career as mathematician began at Lafayette College in Easton, PA from where he obtained his bachelor's degree in civil engineering in 1875. During his time at Lafayette, Craig received an honorable mention in the Mathematical Intercollegiate Competition in New York in 1875 and he was inducted into Phi Beta Kappa. Upon graduating from Lafayette, Craig worked for a year as a math teacher in Newton, NJ.

In August of 1875, Craig wrote a letter to Benjamin Peirce, the famous mathematics professor at Harvard, asking his advice on how Craig could pursue a career in pure mathematics. Peirce was excited by Craig's interest, and explained to him that the most important thing is to create “true original work”. Craig continued to correspond with Peirce and he also began studying the advanced works of famous mathematicians.

In 1876, after working in Newton for a year, Craig read in the *New York Tribune* about the fellowship program for graduate students at the new Johns Hopkins University. The program promised the opportunity to study advanced topics and receive a five hundred dollar per year stipend. This was the perfect opportunity for Craig to pursue advanced mathematics and make a living doing it. Craig immediately wrote to Johns Hopkins president Daniel Coit Gilman, and expressed his interest. He also described his correspondence with Peirce and some of his independent studies of quaternions. Gilman was greatly impressed by Craig, and felt that he was “one of the young men whom we desire to reach”.

Craig was interviewed and accepted as one of the first twenty fellows to begin study at Johns Hopkins in 1876. Curiously, of the twenty original fellows, two graduated from Lafayette College: Craig; to study mathematics, and Edward Hart; to study chemistry.

In the summer before Craig began his studies, Gilman sent him to Washington D. C. to work for and study under Johns Hopkins second president, Simon Newcomb. During this time, Newcomb wrote of Craig, “[He goes] through the most difficult works of the great mathematicians, Abel for instance, as if they were dime novels.”

At Johns Hopkins, Craig studied under one of his greatest idols, the famous British mathematician J. J. Sylvester. The graduate program required four things of their students. They were to devote their attention to one principal subject and one subsidiary subject that was pertinent to the main subject. They were to prepare an “elaborate thesis” on an approved topic. They were required to pass both written and oral exams. Finally, they were also required to learn Latin, French, and German.

On June 13, 1878, Craig and three others became the first four people to receive a PhD from Johns Hopkins. Craig remained at Johns Hopkins for the rest of his life. In 1881 he became an associate professor of applied mathematics. In the same year, he turned down an offer from Harvard University.

Craig served Johns Hopkins well for the remainder of his life. He took over as editor of the *American Journal of Mathematics* after J. J. Sylvester. He served as the head of Johns Hopkins math department from 1894 until his death in 1900. He also conducted weekly seminars on the

theory of functions and differential equations. These seminars became so popular that in 1884 an additional hour was added to them on Saturdays, at the request of the students. In 1895 he helped to establish a chapter of Phi Beta Kappa at Johns Hopkins, and in 1886 helped establish an alumni organization.

During his life Craig was also employed by the U. S. Coast and Geodetic Survey. He was a member of the London Mathematical Society and the Société Mathématique de France. He wrote the texts: *Motions of Fluids*, *Mathematical Theory of Projections*, and *Linear Differential Equations*. He also contributed to many mathematical periodicals. He married Emilie L. Alvord, had one daughter, and he died on May 8, 1900.

### Sources

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3. John C. French, *A History of the University Founded by Johns Hopkins*, Johns Hopkins Press, Baltimore, MD, 1946.

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