

Knott, Cargill Gilston | Encyclopedia.com

Complete Dictionary of Scientific Biography COPYRIGHT 2008 Charles Scribner's Sons
3-4 minutes

(*b.* Penicuik, Scotland, 30 June 1856 ; *d.* Edinburgh, Scotland, 26 October 1922)

natural philosophy, seismology.

Cargill Gilston Knott was the son of Pelham Knott, author of a volume of poetry, who died young. Cargill was brought up by an uncle and aunt. He entered Edinburgh University in 1872, and after gaining his first degree became assistant to P. G . Tait in the Department of Natural Philosophy. In 1883 he left Edinburgh to become a professor of physics at the Imperial University of Japan. In Tokyo he married a Scottish lady, Mary Dixon, sister of the professor of English at the Imperial University. He returned to Edinburgh in 1891 as lecturer, later reader, in applied mathematics, and died in his office from a [heart attack](#) in 1922.

On arriving in Japan, Knott became a member of the famous group (J. Milne, M. Ewing, and T. Gray from Britain, and several Japanese) who inaugurated the modern era in earthquake study. Knott's contributions were chiefly on the mathematical side. He utilized the observational results of his colleagues to pioneer the application of seismology to determine the internal mechanical properties of the earth. In the course of this work, he traced the connection between the times taken by earthquake waves in traveling from the center of the disturbance through the earth's interior to seismic recording stations, and worked out many of the detailed physical characteristics of the waves. These and other pioneering results formed the basis of many later researches on the interior of the earth .

While in Japan, Knott also organized and supervised the first comprehensive magnetic survey of Japan. Many of his pupils and their pupils became Japan's leading investigators of the earth's magnetic field. In addition he investigated Japanese volcanic eruptions .

His work on seismology and geophysics generally earned him many honors, including the award by the Japanese emperor of the Order of the Rising Sun, election to the [Royal Society](#) of London, and the award of the Keith Prize by the University of Edinburgh. He was a principal founder of the Edinburgh Mathematical Society, an energetic secretary of the [Royal Society](#) of Edinburgh, and contributed many articles to the *Encyclopaedia Britannica*. He was also a zealous officeholder in the United Free [Church of Scotland](#) .

BIBLIOGRAPHY

Knott wrote five books, was editor of several others, and was the author of 100 published papers. The papers cover not only his seismological and other geophysical researches, but also researches in physics and pure mathematics, and include a few general and biographical articles. A full list of his publications is given in the *Proceedings of the Royal Society of Edinburgh*, **48** (1923), 242-248.

Among his most important publications are *Physics of Earthquake Phenomena* (Oxford, 1908); [Electricity and Magnetism](#) (Edinburgh, 1893) ; a rev. 3rd ed. of *Kelland and Tait's Quaternions* (Edinburgh, 1904) ; and "The Propagation of Earthquake Waves Through the Earth, and Connected Problems," in *Proceedings of the Royal Society of Edinburgh*, **39** , 157-208.

K. E. Bullen