Herman Ludwig Ferdinand Von Helmholtz was a German physician, physiologist, and physicist. In his broadness of interests, Helmholtz much resembles Dr. Thomas Young another physician-physicist from England.

After a sickly childhood, he studied medicine. In 1849, he was appointed as professor of physiology at the University of Konigsberg. Later, he taught anatomy at Heidelberg and still later, physics at Berlin.

Helmholtz made close study of the function of human eye and in 1851, invented the Ophthalmoscope, which revolutionised ophthalmology and medicine. He felt the great joy of being the first, to see a living human retina. He also devised the ophthalmometer, an instrument that could be used to measure curvature of the eye. In 1866, he published his "Handbook of Physiological Optics", one of the most important book ever, to contribute on the subject of optics.

Von Helmholtz studied the human ear as well. He advanced the theory that the ear detected differences in pitch through the action of cochlea. It retained, he explained, a series of progressively smaller resonators, each of which responded to a sound wave of progressively higher frequency. The pitch detected depended on which resonator responded. The basic tone plus the overtones caused the resonators to react in a specific pattern, so that identical note sounded by two different instruments would be distinguishable by the ear. He thus applied the principle of science to the art of music, something he must have particularly enjoyed, for he was an accomplished musician. He was also the first, to measure the speed of transmission of the nerve impulse. But he is best known for his contribution to physics, in his treatment of conservation of energy, something to which he was led by his studies of muscle action.

Contribution of physics and other basic sciences, has gathered pace with the march of time, towards the sophisticated present day diagnostic and therapeutic technical gadgets. Roentgen (X-rays), Curie (Radiotherapy), Elder (Ultrasound), Sir Godfrey Hounsfield (CT Scan), Raymond Damadian (MRI) have all been true pioneers in this direction, but unlike Helmholtz, Elder and Damadian, were not physicians.