A DISTINGUISHED SCIENTIST.

Career of Baron Hermann von Helmholtz, Who Died in Berlin.

Hermann Ludwig Ferdinand von Helmholtz, to whom physical science is forever indebted, died in Berlin of a second attack of paralysis yesterday.

He was born in Potsdam Aug. 31, 1821. His father was a professor at the Gymnasium; his mother was a descendant of the branch of the Penn family which religious faith exiled from England into Germany. The circumstances of his parents were more than modest; so that, with a native passion

Baron Hermann von Helmholtz.

for serious scientific study, he was obliged to take at the Military Institute of Berlin a course of instruction in medicine which was not seriously scientific.

He served at the Charity Hospital for a time, returned to Potsdam as a military physician, and suddenly, in 1847, surprised the Physical Society of Berlin with a treatise, "Ueber die Erhaltung der Kraft," the doctrine of which—that nothing exists in the outer world but matter, incapable of any alteration except motion in space modified by fixed attractions and repulsions—is the key of physical science.

He was appointed Professor of Anatomy in 1848 at Berlin, Professor of Physiology in 1849 in the University of Königsberg, in 1855 in the University of Bonn, and in 1858 in the University of Heidelberg. He had then made admirable studies on the physiology of hearing, written a memoir on the measurement of the duration of nerve actions, and invented the ophthalmoscope, which shows a virtual and erect or a real and reversed image of the retina. He had given to science, in the popular view, the imperious authority of a miracle. He had at the Heidelberg University the highest office of a German Professor's dreams, he was celebrated wherever science had a friend, and he labored incessantly. He announced to the Berlin Academy his discovery of combinational tones, which are musical sounds resulting from interferences of vibrations; astonished the mathematicians with a memoir on eddies; reappeared as a student of acoustics; returned to optics; published papers on color blindness and contrasts of colors; measured the viscosity of fluids; and made new revelations even of doctrines that others had enunciated before him.

He was perfectly a man of science, honest to the extreme of sensitiveness in a desire to restore priority of inventions to their original authors, however obscure. Yet his work went on in absolute independence from the conclusions of others. He invented the double-siren for investigation of the laws of interference of sound; explained the cause whence arises difference of quality, or timbre, or acoustic color, between different sounds; demonstrated that there are but few sounds which are of a perfectly simple character, that is, in which the fundamental is not accompanied by one or more overtones; and made the first attribution of the disagreeable impression of beats on the ear to the same physiological cause as the one to which is due the painful effect on the eye of a faint, flickering light.

He gave the first mathematical explanation of the formation of ordinary waves on water, besides many other works, the importance of which was placed in a penumbra for all the light that came of his great work, published in 1862, "Lehre von den Tonempfindungen," established the general conclusion of the existence of "Klangfärbe," a series of sound colors which may be arranged in accordance with the definite laws of the solar spectrum.

His ophthalmometer, which accurately measures the reflected image in the eye; his ophthalmoscope, his theory of color perception, based on the assumption that three kinds of nerve fibres exist in the retina, the excitation of which gives respectively sensations of red, green, and violet; and in fine all modern progress in analysis of the sensations of the eye, attest the obligations that are due to him not only by students of optics for science's sake, but the most indifferent to science in humanity.

In 1871 he was appointed Professor of Physics in the University of Berlin. In 1873 the Royal Society of London awarded the Copley Medal to him. In 1883 the German Emperor issued a decree "raising him to the status of nobility." In 1892 the Académie des Sciences elected him an associate member, as a successor to the chair of the ex-Emperor, Dom Pedro.

In 1893 he visited America. A reception was tendered in his honor at Columbia College, and he gave a lecture to its students. He has written about 150 scientific papers, every one of which is of intense value. All reference books on optics, acoustics, and electricity have foundations on his works, or are studded with observations, discoveries, and inventions which he made and by which all branches of scientific knowledge have been extraordinarily developed.

He published, in 1841, "The Nerves of the Invertebrata"; in 1847, "The Conservation of Force"; in 1848, "Heat Generated by Muscular Action"; in 1850, "Measurements Affecting the Periodical Contractions of Muscles and the Distribution of the Nerves Contained in Them"; in 1852, "A Method of Measuring Small Intervals of Muscular Action"; in 1856 to 1866, a "Manual of Physiological Operations."

He published on optics, "A Sketch of the Construction of the Living Eye," in 1851; "The Theory of Permanent Colors," in 1852; "The Sight of Man," in 1855; "Brewster's New Analysis of Solar Light," in 1851; "The Lines of the Solar Spectrum," in 1855, and "The Telestereoscope," in 1857.

He published, in 1862, his "Theory of the Impressions of Sound"; then his popular work on the "Sensations of Tone as a Physiological Basis for the Theory of Music"; in 1856, "Heat Considered as a Mode of Action"; in 1853, "The Formation of Electric Currents in Living Bodies"; in 1854, "The Origins of Force According to Claudius," and revised two collections of his works—one published at Leipsic in 1881 and 1883, the other consisting of his lectures and scattered articles published at Brunswick in 1884.

The New York Times
Published: September 9, 1894