

Prescott Joule (1818-1889) of Salford who delivered in the Section for Mathematics and Physics of the British Medical Association, 1843, an address "On the Calorific Effects of Magneto-electricity and the Mechanical Value of Heat," and Hermann von Helmholtz (1821-94). The latter's address on "The Preservation of Force," was delivered in 1847 before The Physical Society of Berlin. Both Mayer and Helmholtz must be credited with the elaboration and the final acceptance by the world of the great teaching. It is true that what they taught had been imagined or even asserted before. Titus Lucretius Carus said nearly 2000 years ago: "New things will always arise from the disintegration of others." Marriotte has the following: "*La nature ne fait rien de rien, et la nature ne se perd point*". Leibnitz formulated the doctrine of the preservation of force mathematically in 1686; the Marquise du Chatelet expressed cognate views in 1742; and Lavoisier taught the indestructibility of matter. But the world had after all to wait for Mayer and Helmholtz before previous suggestions were generally welcomed and adopted. In connection with all this you might learn one thing, my young friends, you should not forget. You need not be attached to a big laboratory or live in a town counting its inhabitants by millions to become famous and a benefactor to mankind. Robert Mayer was a physician in a small town in South Germany, like McDowell and Marion Sims in America.

Conrad Martin Johann Langenbeck (1776-1851) was professor of anatomy, surgery, and ophthalmology. He extirpated the uterus several times, improved the technique of amputations, of ligatures, of lithotomy, of cataract, and pupil operations. Of all these clinical feats I saw specimens in his clinic. It must strike you that there are men alive to-day who antedate antisepsis and asepsis, and you wonder at the kind of results obtained by men who worked in the anatomical and the surgical theatre the same day, and every day. What at those times you could have seen all over the world, however, I participated in myself. For when I was professor of the diseases of children in the New York Medical College, 1860-64, my surgical colleague was John Murray Carnochan (1817-1887). I admired him much, both on account of his learning and his dexterity. In one respect only we disagreed. I saw forty-five years ago a great many cases of diphtheritic croup and performed numerous tracheotomies. It was nearly thirty years before the era of intubation. Once in a faculty meeting, he enquired: "Does Jacobi not cut too many throats?" Still, he was a great surgeon indeed, who ligated (1851) the femoral artery for elephantiasis, excised (1850) the second branch of the tri-facial nerve centrally from Meckel's ganglion, resected the ulna (1853),