fixed the elementary conceptions and quantities with which he operated. All his researches were comprised under the very significant title "electro-dynamical measurements." As such they remain a great monument of ingenuity and unparalleled accuracy.[1] The second

[1] Gauss had, some years before Weber commenced his electrical researches, introduced the idea of an absolute measure of other than mechanical forces—*i.e.*, following up the definition of force in the Newtonian laws of motion, that it is the cause which brings about a change of motion, he suggested that every physical force can be measured by the velocity it imparts to a movable body of measurable mass, the quantity of mass being in the same locality measured by its weight; and he applied this to the measurement of magnetic forces. In applying the same idea to the measurement of electric currents, Weber came at once upon the circumstance that the forces exerted by an electric current can be measured in two ways—*viz.*, by the action they have upon magnets or by that which they have on other electric currents. Now by a familiar conception, electricians look upon a current of electricity as measurable by the quantity of electricity which flows through a section of the circuit in a given unit of time, this quantity of electricity being measurable in the same way as Coulomb measured the action at a distance of charged bodies. Should it then be possible to carry out this latter measurement of an electric current, a comparison between the electro-magnetic and the known electro-static units of electricity would become possible. Faraday had already, in 1833 and 1834, made estimates of the numerical relation of the quantity of electricity in a current, measured by its chemical or electro-magnetic effects, and of the same quantity if produced by an electrical machine. These estimates were more than twenty years later, in 1856, reduced to accurate measurements by Weber and Kohlrausch. Through these measurements, which confirmed the enormous numbers which are revealed when we compare electricity at rest and electricity in motion, Weber finished the series of accurate measurements, reduced to an absolute or mechanical standard, which had been begun by Gauss in 1833. It was soon recognised of what practical importance these data must be to electricians. Accordingly the British Association at their meeting at Manchester in 1861 appointed a committee, on the suggestion and under the presidency of Sir William Thomson, called the "British Association Committee of Electrical Standards." "This committee worked for nearly ten years through the whole field of electro-magnetic and electro-static measurement, until in its final report, presented to the Exeter meeting in August 1869, it fairly launched the absolute system for general use" (Thomson, 'Popular Lectures and Addresses,' vol. i. p. 84). In recognition of Weber's great merit in first introducing this system into electrical science and practice, the name "Weber" had been selected by Latimer Clark for the unit of current. In the final fixing of the units in Paris in 1881 other units than those previously in use were adopted, and to avoid confusion the names were somewhat differently