

of animals and plants, where the rays of comparative anatomy and embryology could not reach."¹ This bold generalisation, which had been prepared by a long series of botanical and morphological researches in and out of Germany, met alternately with applause and criticism; it gave rise to a long controversy, and was the starting-point of a whole line of important discoveries.² It secured for Germany a long period of supremacy in physiological science. This supremacy was more than maintained by a great volume of minute investigations, which emanated from the schools, and centred in the names, of E. H. Weber³

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Ernst Heinrich
Weber

¹ Du Bois-Reymond, 'Reden,' vol. ii. p. 541, &c.

² "Whatever cavillers may say, it is certain that histology before 1838, and histology since then, are two different sciences—in scope, in purpose, and in dignity—and the eminent men to whom we allude may safely answer all detraction by a proud *Circumspice*."—Huxley in his valuable paper on "The Cell Theory" in the 'British and Foreign Medical Chirurgical Review,' 1853, vol. xii. p. 290.

³ The three brothers Weber (Ernst Heinrich, 1795-1878; Wilhelm, 1804-91; and Eduard, 1806-71) may be looked upon as early representatives of the best form of German research on the lines now recognised as the true and fruitful ones in natural science. Born in an age when other great and more widely known reformers—such as Liebig, Schönlein, and Joh. Müller—freed themselves with difficulty from the prevailing metaphysical systems, they seem to have at once seized the true spirit of exact research without relinquishing the broader philosophical and encyclopædic view of the sciences which they cultivated. Living far into an age when the utilitarian spirit became equally

seductive in an opposite direction, they preserved pure and undefiled within themselves the German ideal of *Wissenschaft* as a pursuit carried on for its own intrinsic value, not for any immediate practical object. Their position, especially that of the two elder brothers, is in this respect unique, and may be studied independently of the scientific ideas which they represented, and which will occupy us later on as a chapter in the history of thought characteristic of the German mind and the best type of the university studies. In three works of classical value—'Die Wellenlehre auf Experimenten begründet' (E. H. and W. Weber), 1825; 'Die Mechanik der menschlichen Gehwerkzeuge' (W. and E. Weber), 1836; 'Elektrodynamische Maasbestimmungen' (W. Weber), 1846 onward—and in a great number of special investigations, the method of exact measurement was applied to physical, physiological, and even mental phenomena, and the foundation laid for a mechanical description and mathematical calculation. The later generalisations, known as Wilhelm Weber's law of electro-dynamics and E. H. Weber's law of psychophysics, have given rise to