

24.
Psycho-
physics.

the circle of the exact or mechanical sciences. But not only in its far-reaching applications to medical knowledge and practice has the movement which centred in Weber and Müller shown its strength and importance; it has also, from the commencement, extended its influence in another direction. To it belongs pre-eminently the cultivation of that borderland which connects the natural and the mental sciences. Müller¹ himself began his career by a study of the mechanism of the perceptions of the senses. He affirmed the law of *specific energies*,

interesting to note that Prof. Billroth does not employ the word biological, but uses the untranslatable compound *naturwissenschaftlich-medicinisch*.

¹ Johannes Müller (1801-58) has been termed the Haller of the nineteenth century, the Cuvier of Germany. A very good account of his work, which forms an important chapter in the history of German biology, is contained in Du Bois-Reymond's 'Gedächtnissrede auf Joh. Müller' (1858), reprinted with extensive notes in his 'Reden,' vol. ii. pp. 143-334. Müller is there considered as the last representative of a dynasty of philosophers who embraced the whole domain of "biology," which since has become divided into various sciences, notably the morphological and the physiological branches. He thus stands out as the master of some of the greatest modern representatives of natural and medical science, such as Schwann and Henle in anatomy, Brücke, Du Bois-Reymond, and Helmholtz in physiology, Virchow in pathological anatomy. He together with Lucas Schönlein (1793-1864) may be considered as the founder of the modern Berlin school of medicine, contemporaneous with which is the modern

Austrian school, with the names of Purkinje, Skoda, Oppolzer, and Rokitansky. An excellent characterisation of the different positions and influences, of the cross-currents of thought, of the original homes and of the wanderings of the scientific spirit through the many German-speaking countries and the extensive network of German universities, will be found in Billroth, *loc. cit.*, pp. 307-366. If we imagine a similar life as existing all through the century in other domains of thought—in philosophy, theology, philology, mathematics, chemistry, law, and the science of history—we get a faint idea of the work of the German universities. In Lexis, 'Die deutschen Universitäten,' an attempt has been made to give such a picture. The picture, however, suffers by the exclusion of the Austrian universities, and these—notably in the medical world—hold such a very high position that the record of the united work is somewhat incomplete. The sciences are also in this record cut up into many branches, whereas in the earlier part of the century many of these were united and represented by one great name. Such a name was Johannes Müller in biology.