

## THE NATURE OF THE SOUL

quantities; in mathematics, in the first place, and to a greater or less extent in astronomy, mechanics, and a great part of physics and chemistry. Hence these studies are called "exact sciences" in the narrower sense. It is, however, productive only of error to call all the physical sciences *exact*, and oppose them to the historical, mental, and moral sciences. The greater part of physical science can no more be treated as an *exact* science than history can; this is especially true of biology and of its subsidiary branch, psychology. As psychology is a part of physiology, it must, as a general rule, follow the chief methods of that science. It must establish the facts of psychic activity by empirical methods as much as possible, by observation and experiment, and it must then gather the laws of the mind by inductive and deductive inferences from its observations, and formulate them with the utmost distinctness. But, for obvious reasons, it is rarely possible to formulate them mathematically. Such a procedure is only profitable in one section of the physiology of the senses; it is not practicable in the greater part of cerebral physiology.

One small section of physiology, which seems amenable to the "exact" method of investigation, has been carefully studied for the last twenty years and raised to the position of a separate science under the title of *psycho-physics*. Its founders, the physiologists Theodor Fechner and Ernst Heinrich Weber, first of all closely investigated the dependence of sensations on the external stimuli that act on the organs of sense, and particularly the quantitative relation between the strength of the stimulus and the intensity of the sensation. They found that a certain minimum strength of stimulus is requisite for the excitement of a sensation, and that a