

na.\* Experiments and pathological observations, however, seem to show that the hemispheres of the brain are the chief instruments by which the intellectual operations are carried on; that the central parts, such as the optic lobes and the medulla oblongata, are those principally concerned in sensation; and that the cerebellum is the chief sensorial agent in voluntary motion.

#### § 4. *Comparative Physiology of Perception.*

OF the perceptions of the lower animals, and of the laws which they obey, our knowledge must, of necessity, be extremely imperfect, since it must be derived from a comparison with the results of our own sensitive powers, which may differ very essentially from those of the subjects of our observation. The same kind of organ which, in ourselves, conveys certain definite feelings, may, when modified in other animals, be the source of very different kinds of sensations and perceptions, of which our minds have not the power to form any adequate conception. Many of the qualities of surrounding bodies, which escape our more obtuse senses, may be distinctly perceived, in all their gradations, by particular tribes of animals, furnished with more delicate organs. Many quadrupeds and birds possess powers of vision incomparably more extensive than our own; in acuteness of hearing, we are excelled by a great number of animals, and in delicacy of taste and smell, there are few quadrupeds that do not far surpass us. The organ of smell, in particular, is often spread over a vast extent of surface, in a cavity occupying the greatest part of the head; so that the perceptions of this sense must be infinitely diversified.

\* For a summary of the doctrines of Drs. Gall and Spurzheim, I beg leave to refer the reader to an account which I drew up, many years ago, for the *Encyclopædia Britannica*, and which composed the article "CRANIOSCOPY" in the last supplement to that work, edited by Mr. Napier.