

cating a great volume of brain. When we leave the vertebrated animals, we find the nervous system, in most, materially altered and degraded, so that more power is given apparently to instinct and less to intellect. In other animals, as we descend, the nervous system becomes more and more dispersed, so that in those at the foot of the scale we discern no traces of intellect, and very few of instinct; and only so much apparent sensation as is necessary for the purposes of nutrition and reproduction. I have made the above observations, because they bear in some degree on the question now before us. For if we pay due attention to the proceedings of animals, we shall find that those whose nervous system is cerebral usually exhibit the most striking proofs of intellectual action, are most capable of instruction, and are less remarkable for the complexity and intenseness of their instincts; while those of the next grade, whose nervous system is ganglionic, as far as we know them, though not devoid of intellect, are endued with a much smaller portion of it, while their instinctive operations are all but miraculous; and that where the nervous system is still less concentrated both are greatly weakened, till at the bottom of the scale they almost disappear. From hence it seems to follow that extraordinary instinctive powers are not the result of extraordinary intellectual ones.

But when we reflect further, that even in cases where the instincts are most complex and wonderful, the animal practises them *infallibly*, without guide or direction, and is as expert at them when it first emerges into life, as when it has been long engaged in the practice of them; it follows that it must be instructed in them from the first moment of its existence in the state in which it exercises them, by an infallible teacher. The bee, the moment it emerges from the pupa, begins to collect honey and pollen, and to