

the impressions made by external objects on their sentient organs must be of a nature widely different from those which the same objects communicate to ourselves. While with regard to distance and magnitude our perceptions take a wider range, and appear infinitely extended when compared with those of insects, yet they may, in other respects, be greatly inferior. The delicate discrimination of the more subtle affections of matter is, perhaps, compatible only with a minute scale of organization. Thus, the varying degrees of moisture or dryness of the atmosphere, the continual changes in its pressure, the fluctuations in its electrical state, and various other physical conditions, may be objects of distinct perception to these minute animals. Organs may exist in them, appropriated to receive impressions, of which we can have no idea; and opening avenues to various kinds of knowledge, to which we must ever remain utter strangers. Art, it is true, has supplied us with instruments for discovering and measuring many of the properties of matter, which our unassisted senses are inadequate to observe. But neither our thermometers, nor our electroscopes, our hygrometers, nor our galvanometers, however skilfully devised or elaborately constructed, can vie in delicacy and perfection with that refined apparatus of the senses which nature has bestowed on even the minutest insect. There is reason to believe, as Dr. Wollaston has shown, that the hearing of insects comprehends a range of perceptions very different from that of the same sense in the larger animals; and that a class of vibrations too rapid to excite our auditory nerves, is perfectly audible to them. Sir John Herschel has also very clearly proved that, if we admit the truth of the undulatory theory of light, it is easy to conceive how the limits of visible colour may be established; for if there be no nervous fibres in unison with vibrations, more or less frequent than certain limits, such vibrations, though they reach the retina, will produce no sensation. Thus, it is perfectly possible that insects, and other animals, may be incapable of being affected by any of the colours which we perceive; while they may be suscepti-