

in proportion as the pieces are smaller and more numerous.

89. Compound eyes are destitute of the optical apparatus necessary to concentrate the rays of light, and cannot adapt themselves to the distance of objects; they see at a certain distance, but cannot look at pleasure. The perfection of their sight depends on the number of façettes or cones, and the manner in which they are placed. Their field of vision is wide, when the eye is prominent; it is very limited, on the contrary, when the eye is flat. Thus the dragon-flies, on account of the great prominency of their eyes, see equally well in all directions, before, behind, or laterally; whilst the water-bugs, which have the eyes nearly on a level with the head, can see to only a very short distance before them.

90. If there be animals destitute of eyes, they are either of a very inferior rank, such as most of the polypi, or else they are animals which live under unusual circumstances, such as the intestinal worms. Even among the vertebrates, there are some that lack the faculty of sight, as the *Myxine glutinosa*, which has merely a rudimentary eye concealed under the skin, and destitute of a crystalline lens. Others, which live in darkness, have not even rudimentary eyes, as, for example, that curious fish (*Amblyopsis spelæus*), which lives in the Mammoth Cave, and which appears to want even the orbital cavity. The craw-fishes, (*Astacus pellucidus*), of this same cave, are also blind; having merely the pedicle for the eyes, without any traces of façettes.

2. Hearing.

91. To hear, is to perceive sounds. The faculty of perceiving sounds is seated in a peculiar apparatus, the EAR, which is constructed with a view to collect and augment the sonorous vibrations of the atmosphere, and convey them to