

nutive beings exercise the sense of vision. Four descriptions of visual organs are met with in the class of Articulated Animals; the first are the simple eyes, or *stemmata*, as they are termed, which appear as lucid spots, resembling those we have noticed in the higher orders of Annelida; the second, are the *conglomerate* eyes, which consist of clusters or aggregations of simple eyes; the third, are the *compound* eyes, which are formed of a vast assemblage of small tubes, each having its respective apparatus of humours, and of retina, and terminating externally in a separate cornea, slightly elevated above the general surface of the organ: the fourth kind of eyes, which have not yet been distinguished by any particular appellation, are constituted by a number of separate lenses, and subjacent retinae, but the whole covered by a single cornea common to them all.

Few insects are wholly destitute of visual organs, either in their larva or perfect states.* The larvæ of those insects which undergo a complete metamorphosis have only stemmata; but those which are subjected only to a partial change of form, as the Orthoptera, the Hemiptera, and the aquatic Neuroptera, have compound as well as simple eyes. Perfect insects, with the few exceptions above noticed, have always compound eyes, generally two in number, placed on the sides of the head; and they are often accompanied by stemmata situated between, or behind them, on the upper part of the head. These stemmata, when met with, are generally three in number, and are either placed in a row, or form a triangle. Their structure has been minutely examined by Professor Muller, who found them to contain a hard and spherical crystalline lens, a vitreous humour, and a choroid coat, with its accompanying black pigment; the whole being covered externally by a convex cornea. The stemmata of

* This is the case, however, with the genus *Claviger*, among the Coleoptera *Braula* (Nitzsch) among Diptera, and also some of the species of *Pupipara*, *Nycteribia*, and *Melophagus*, which are all parasitic insects: there are also five species of ants, whose neuters have no eyes. (Muller, Annales des Sc. Nat. xvii. 366.)