

reflect on the individual differences between organic beings in a state of nature, as shown by every wild animal knowing its mate; and when we reflect on the infinite diversity of the many varieties of our domesticated productions, we may well be inclined to exclaim, though falsely as I believe, that Variability must be looked at as an ultimate fact, necessarily contingent on reproduction.

Those authors who adopt this latter view would probably deny that each separate variation has its own proper exciting cause. Although we can seldom trace the precise relation between cause and effect, yet the considerations presently to be given lead to the conclusion that each modification must have its own distinct cause, and is not the result of what we blindly call accident. The following striking case has been communicated to me by Dr. William Ogle. Two girls, born as twins, and in all respects extremely alike, had their little fingers on both hands crooked; and in both children the second bicuspid tooth of the second dentition, on the right side in the upper jaw was misplaced; for, instead of standing in a line with the others, it grew from the roof of the mouth behind the first bicuspid. Neither the parents nor any other members of the family were known to have exhibited any similar peculiarity; but a son of one of these girls had the same tooth similarly misplaced. Now, as both the girls were affected in exactly the same manner, the idea of accident is at once excluded: and we are compelled to admit that there must have existed some precise and sufficient cause which, if it had occurred a hundred times, would have given crooked fingers and misplaced bicuspid teeth to a hundred children. It is of course possible that this case may have been due to reversion to some long-forgotten progenitor, and this would much weaken the value of the argument. I have been led to think of the probability of reversion, from having been told by Mr. Galton of another case of twin girls born with their little fingers slightly crooked, which they inherited from their maternal grandmother.

We will now consider the general arguments, which appear to me to have great weight, in favour of the view that variations of all kinds and degrees are directly or indirectly caused