

also seen that in the case of plants the male element may affect in a direct manner the tissues of the mother, and with animals may lead to the modification of her future progeny. In the vegetable kingdom the offspring from a cross between two species or varieties, whether effected by seminal generation or by grafting, often revert, to a greater or less degree, in the first or in a succeeding generation, to the two parent-forms; and this reversion may affect the whole flower, fruit, or leaf-bud, or only the half or a smaller segment of a single organ. In some cases, however, such segregation of character apparently depends on an incapacity for union rather than on reversion, for the flowers or fruit which are first produced display by segments the characters of both parents. The various facts here given ought to be well considered by any one who wishes to embrace under a single point of view the many modes of reproduction by gemmation, division, and sexual union, the reparation of lost parts, variation, inheritance, reversion, and other such phenomena. Towards the close of the second volume I shall attempt to connect these facts together by the hypothesis of pangenesis.

In the early half of the present chapter I have given a long list of plants in which through bud-variation, that is, independently of reproduction by seed, the fruit has suddenly become modified in size, colour, flavour, hairiness, shape, and time of maturity; flowers have similarly changed in shape, colour, in being double, and greatly in the character of the calyx; young branches or shoots have changed in colour, in bearing spines and in habit of growth, as in climbing or in weeping; leaves have changed in becoming variegated, in shape, period of unfolding, and in their arrangement on the axis. Buds of all kinds, whether produced on ordinary branches or on subterranean stems, whether simple or much modified and supplied with a stock of nutriment, as in tubers and bulbs, are all liable to sudden variations of the same general nature.

In the list, many of the cases are certainly due to reversion to characters not acquired from a cross, but which were formerly present and have since been lost for a longer or shorter time;—as when a bud on a variegated plant produces plain leaves, or when the variously-coloured flowers of the