

CHAPTER XI.

ON BUD-VARIATION, AND ON CERTAIN ANOMALOUS MODES OF
REPRODUCTION AND VARIATION.

BUD-VARIATION IN THE PEACH, PLUM, CHERRY, VINE, GOOSEBERRY, CURRANT, AND BANANA, AS SHOWN BY THE MODIFIED FRUIT—IN FLOWERS: CAMELLIAS, AZALEAS, CHRYSANTHEMUMS, ROSES, ETC.—ON THE RUNNING OF THE COLOUR IN CARNATIONS—BUD-VARIATIONS IN LEAVES—VARIATIONS BY SUCKERS, TUBERS, AND BULBS—ON THE BREAKING OF TULIPS—BUD-VARIATIONS GRADUATE INTO CHANGES CONSEQUENT ON CHANGED CONDITIONS OF LIFE—GRAFT-HYBRIDS—ON THE SEGREGATION OF THE PARENTAL CHARACTERS IN SEMINAL HYBRIDS BY BUD-VARIATION—ON THE DIRECT OR IMMEDIATE ACTION OF FOREIGN POLLEN ON THE MOTHER-PLANT—ON THE EFFECTS IN FEMALE ANIMALS OF A PREVIOUS IMPREGNATION ON THE SUBSEQUENT OFFSPRING—CONCLUSION AND SUMMARY.

THIS chapter will be chiefly devoted to a subject in many respects important, namely, bud-variation. By this term I include all those sudden changes in structure or appearance which occasionally occur in full-grown plants in their flower-buds or leaf-buds. Gardeners call such changes "Sports;" but this, as previously remarked, is an ill-defined expression, as it has often been applied to strongly marked variations in seedling plants. The difference between seminal and bud reproduction is not so great as it at first appears; for each bud is in one sense a new and distinct individual; but such individuals are produced through the formation of various kinds of buds without the aid of any special apparatus, whilst fertile seeds are produced by the concurrence of the two sexual elements. The modifications which arise through bud-variation can generally be propagated to any extent by grafting, budding, cuttings, bulbs, &c., and occasionally even by seed. Some few of our most beautiful and useful productions have arisen by bud-variation.

Bud-variations have as yet been observed only in the vegetable kingdom; but it is probable that if compound animals, such as corals, &c., had been subjected to a long