

course of domestication, they would have varied by buds; for they resemble plants in many respects. For instance, any new or peculiar character presented by a compound animal is propagated by budding, as occurs with differently coloured Hydras, and as Mr. Gosse has shown to be the case with a singular variety of a true coral. Varieties of the Hydra have also been grafted on other varieties, and have retained their character.

I will in the first place give all the cases of bud-variations which I have been able to collect, and afterwards show their importance.¹ These cases prove that those authors who, like Pallas, attribute all variability to the crossing either of distinct races, or of distinct individuals belonging to the same race but somewhat different from each other, are in error; as are those authors who attribute all variability to the mere act of sexual union. Nor can we account in all cases for the appearance through bud-variation of new characters by the principle of reversion to long-lost characters. He who wishes to judge how far the conditions of life directly cause each particular variation ought to reflect well on the cases immediately to be given. I will commence with bud-variations, as exhibited in the fruit, and then pass on to flowers, and finally to leaves.

Peach (Amygdalus persica).—In the last chapter I gave two cases of a peach-almond and a double-flowered almond which suddenly produced fruit closely resembling true peaches. I have also given many cases of peach-trees producing buds, which, when developed into branches, have yielded nectarines. We have seen that no less than six named and several unnamed varieties of the peach have thus produced several varieties of nectarine. I have shown that it is highly improbable that all these peach-trees, some of which are old varieties, and have been propagated by the million, are hybrids from the peach and nectarine, and that it is opposed to all analogy to attribute the occasional production of nectarines

¹ Since the publication of the first edition of this work, I have found that M. Carrière, *Chef des Pépinières au Mus. d'Hist. Nat.*, in his excellent Essay, 'Production et Fixation des Variétés, 1865,' has given a list of bud-variations far more extensive

than mine; but as these relate chiefly to cases occurring in France I have left my list as it stood, adding a few facts from M. Carrière and others. Any one who wishes to study the subject fully should refer to M. Carrière's Essay.