

“ years or more, and sometimes this change never takes place.”⁸² The broken or variegated colours which give value to all tulips are due to bud-variation; for although the Bybloemens and some other kinds have been raised from several distinct breeders, yet all the Baguets are said to have come from a single breeder or seedling. This bud-variation, in accordance with the views of MM. Vilmorin and Verlot,⁸³ is probably an attempt to revert to that uniform colour which is natural to the species. A tulip, however, which has already become broken, when treated with too strong manure, is liable to flush or lose by a second act of reversion its variegated colours. Some kinds, as Imperatrix Florum, are much more liable than others to flushing; and Mr. Dickson maintains⁸⁴ that this can no more be accounted for than the variation of any other plant. He believes that English growers, from care in choosing seed from broken flowers instead of from plain flowers, have to a certain extent diminished the tendency in flowers already broken to flushing or secondary reversion. *Iris xiphium*, according to M. Carrière (p. 65), behaves in nearly the same manner, as do so many tulips.

During two consecutive years all the early flowers in a bed of *Tigridia conchiflora*⁸⁵ resembled those of the old *T. pavonia*; but the later flowers assumed their proper colour of fine yellow, spotted with crimson. An apparently authentic account has been published⁸⁶ of two forms of *Hemerocallis*, which have been universally considered as distinct species, changing into each other; for the roots of the large-flowered tawny *H. fulva*, being divided and planted in a different soil and place, produced the small-flowered *H. flava*, as well as some intermediate forms. It is doubtful whether such cases as these latter, as well as the “flushing” of broken tulips and the “running” of particoloured carnations,—that is, their more or less complete return to a uniform tint,—ought to be classed under bud-variation, or ought to be retained for the chapter in which I treat of the direct action of the conditions of life on organic beings. These cases, however, have this much in bud-variation, that the change is effected through buds and not through seminal reproduction. But, on the other hand, there is this difference—that in ordinary cases of bud-variation, one bud alone changes, whilst in the foregoing cases all the buds on the same plant were modified together. With the potato, we have seen an intermediate case, for all the eyes in one tuber simultaneously changed their character.

I will conclude with a few allied cases, which may be ranked either under bud-variation, or under the direct action of the conditions of life. When the common Hepatica is transplanted from

⁸² Loudon's 'Encyclopædia of Gardening,' p. 1024.

⁸³ 'Production des Variétés,' 1865, p. 63.

⁸⁴ 'Gard. Chron.,' 1841, p. 782;

1842, p. 55.

⁸⁵ 'Gard. Chron.,' 1849, p. 565.

⁸⁶ 'Transact. Linn. Soc.,' vol. ii. p. 354.