

purple-flowered plants like their father; whilst the pale brown seeds yielded normal red-flowered plants; and Major Clarke, by sowing similar seeds, has observed on a greater scale the same result. The evidence in this case of the direct action of the pollen of one species on the colour of the seeds of another species appears to me conclusive.

Gallesio¹³² fertilised the flowers of an orange with pollen from the lemon; and one fruit thus produced bore a longitudinal stripe of peel having the colour, flavour, and other characters of the lemon. Mr. Anderson¹³³ fertilised a green-fleshed melon with pollen from a scarlet-fleshed kind; in two of the fruits "a sensible change was perceptible: and four other fruits were somewhat altered both internally and externally." The seeds of the two first-mentioned fruits produced plants partaking of the good properties of both parents. In the United States, where Cucurbitaceæ are largely cultivated, it is the popular belief¹³⁴ that the fruit is thus directly affected by foreign pollen; and I have received a similar statement with respect to the cucumber in England. It is believed that grapes have been thus affected in colour, size, and shape: in France a pale-coloured grape had its juice tinted by the pollen of the dark-coloured Teinturier; in Germany a variety bore berries which were affected by the pollen of two adjoining kinds; some of the berries being only partially affected or mottled.¹³⁵

As long ago as 1751¹³⁶ it was observed that, when differently-coloured varieties of maize grew near each other, they mutually affected each other's seeds, and this is now a popular belief in the United States. Dr. Savi¹³⁷ tried the experiment with care: he sowed yellow and black-seeded maize together, and on the same ear some of the seeds were yellow, some black, and some mottled, the differently coloured seeds being arranged irregularly or in rows. Prof. Hildebrand has repeated the experiment¹³⁸ with the precaution of ascertaining that the mother-plant was true. A kind bearing yellow grains was fertilised with pollen of a kind having brown grains, and two ears produced yellow grains mingled with others of a dirty violet tint. A third ear had only yellow grains, but one side of the spindle was tinted of a reddish-brown; so that here we have the important fact of the influence of the foreign pollen extending

¹³² 'Traité du Citrus,' p. 40

¹³³ 'Transact. Hort. Soc.,' vol. iii. p. 318. See also vol. v. p. 65.

¹³⁴ Prof. Asa Gray, 'Proc. Acad. Sc.,' Boston, vol. iv., 1860, p. 21. I have received statements to the same effect from other persons in the United States.

¹³⁵ For the French case, see 'Journ. Hort. Soc.,' vol. i. new series, 1866, p. 50. For Germany, see M. Jack,

quoted in Henfrey's 'Botanical Gazette,' vol. i. p. 277. A case in England has recently been alluded to by the Rev. J. M. Berkeley before the Hort. Soc. of London.

¹³⁶ 'Philosophical Transactions,' vol. xlvii., 1751-52, p. 206.

¹³⁷ Gallesio, 'Teoria della Riproduzione' 1816, p. 95.

¹³⁸ 'Bot. Zeitung,' May, 1868, p. 326.