

that the one can be readily grafted and succeeds admirably on the other, the fact of variability being thus caused is not surprising; as we are here enabled to see the cause, namely, the very different nature of the stock and graft. Several North American varieties of the plum and peach are well known to reproduce themselves truly by seed; but Downing asserts,¹⁵ "that when a graft is taken from one of these trees and placed upon another stock, this grafted tree is found to lose its singular property of producing the same variety by seed, and becomes like all other worked trees;"—that is, its seedlings become highly variable. Another case is worth giving: the Lalande variety of the walnut-tree leafs between April 20th and May 15th, and its seedlings invariably inherit the same habit; whilst several other varieties of the walnut leaf in June. Now, if seedlings are raised from the May-leafing Lalande variety, grafted on another May-leafing variety, though both stock and graft have the same early habit of leafing, yet the seedlings leaf at various times, even as late as the 5th of June.¹⁶ Such facts as these are well fitted to show on what obscure and slight causes variability depends.

I may here just allude to the appearance of new and valuable varieties of fruit-trees and of wheat in woods and waste places, which at first sight seems a most anomalous circumstance. In France a considerable number of the best pears have been discovered in woods; and this has occurred so frequently, that Piteau asserts that "improved varieties of our cultivated fruits rarely originate with nurserymen."¹⁷ In England, on the other hand, no instance of a good pear having been found wild has been recorded; and Mr. Rivers informs me that he knows of only one instance with apples, namely, the Bess Poole, which was discovered in a wood in Nottinghamshire. This difference between the two countries may be in part accounted for by the more favourable climate of France, but chiefly

¹⁵ 'The Fruits of America,' 1845, p. 5.

¹⁶ M. Cardan, in 'Comptes Rendus,' Dec. 1848, quoted in 'Gard. Chronicle,' 1849, p. 101.

¹⁷ M. Alexis Jordan mentions four excellent pears found in woods in France, and alludes to others ('Mém. Acad. de Lyon,' tom. ii. 1852, p. 159).

Poiteau's remark is quoted in 'Gardener's Mag.,' vol. iv., 1828, p. 385. See 'Gard. Chronicle,' 1862, p. 335, for another case of a new variety of the pear found in a hedge in France. Also for another case, see Loudon's 'Encyclop. of Gardening,' p. 901. Mr. Rivers has given me similar information.