

species. The *P. præcox* is supposed by some authors⁸³ to be the parent of the dwarf paradise stock, which, owing to the fibrous roots not penetrating deeply into the ground, is so largely used for grafting; but the paradise stocks, it is asserted,⁸⁴ cannot be propagated true by seed. The common wild crab varies considerably in England; but many of the varieties are believed to be escaped seedlings.⁸⁵ Every one knows the great difference in the manner of growth, in the foliage, flowers, and especially in the fruit, between the almost innumerable varieties of the apple. The pips or seeds (as I know by comparison) likewise differ considerably in shape, size, and colour. The fruit is adapted for eating or for cooking in various ways, and keeps for only a few weeks or for nearly two years. Some few kinds have the fruit covered with a powdery secretion, called bloom, like that on plums; and "it is extremely remarkable that this occurs almost exclusively among varieties cultivated in Russia."⁸⁶ Another Russian apple, the white Astracan, possesses the singular property of becoming transparent, when ripe, like some sorts of crabs. The *api étoilé* has five prominent ridges, hence its name; the *api noir* is nearly black: the *twin cluster pippin* often bears fruit joined in pairs.⁸⁷ The trees of the several sorts differ greatly in their periods of leafing and flowering; in my orchard the *Court Pendu Plat* produces leaves so late, that during several springs I thought that it was dead. The Tiffin apple scarcely bears a leaf when in full bloom; the Cornish crab, on the other hand, bears so many leaves at this period that the flowers can hardly be seen.⁸⁸ In some kinds the fruit ripens in mid-summer; in others, late in the autumn. These several differences in leafing, flowering, and fruiting, are not at all necessarily correlated; for, as Andrew Knight has remarked,⁸⁹ no one can judge from the early flowering of a new seedling, or from the early shedding or change of colour of the leaves, whether it will mature its fruit early in the season.

The varieties differ greatly in constitution. It is notorious that our summers are not hot enough for the Newtown Pippin,⁹⁰ which

⁸³ Mr. Lowe states in his 'Flora of Madeira' (quoted in 'Gard. Chron.,' 1862, p. 215) that the *P. malus*, with its nearly sessile fruit, ranges farther south than the long-stalked *P. acerba*, which is entirely absent in Madeira, the Canaries, and apparently in Portugal. This fact supports the belief that these two forms deserve to be called species. But the characters separating them are of slight importance, and of a kind known to vary in other cultivated fruit-trees.

⁸⁴ See 'Journ. of Hort. Tour, by Deputation of the Caledonian Hort.

Soc.,' 1823, p. 459.

⁸⁵ H. C. Watson, 'Cybele Britannica,' vol. i. p. 334.

⁸⁶ Loudon's 'Gardener's Mag.,' vol. vi., 1830, p. 83.

⁸⁷ See 'Catalogue of Fruit in Garden of Hort. Soc.,' 1842. and Downing's 'American Fruit Trees.'

⁸⁸ Loudon's 'Gardener's Magazine,' vol. iv., 1828, p. 112.

⁸⁹ 'The Culture of the Apple,' p. 43. Van Mons makes the same remark on the pear, 'Arbres Fruitières,' tom. ii., 1836., p. 414.

⁹⁰ Lindley's 'Horticulture,' p. 116