

variable than trees growing in their native forests, there can hardly be a doubt that they have yielded a greater number of strongly-marked and singular variations of structure.

In manner of growth, we have weeping or pendulous varieties of the willow, ash, elm, oak, and yew, and other trees; and this weeping habit is sometimes inherited, though in a singularly capricious manner. In the Lombardy poplar, and in certain fastigate or pyramidal varieties of thorns, junipers, oaks, &c., we have an opposite kind of growth. The Hessian oak,¹⁴⁷ which is famous from its fastigate habit and size, bears hardly any resemblance in general appearance to a common oak; "its acorns are not sure to produce plants of the same habit; some, however, turn out the same as the parent-tree." Another fastigate oak is said to have been found wild in the Pyrenees, and this is a surprising circumstance; it generally comes so true by seed, that De Candolle considered it as specifically distinct.¹⁴⁸ The fastigate Juniper (*J. suecica*) likewise transmits its character by seed.¹⁴⁹ Dr. Falconer informs me that in the Botanic Gardens at Calcutta the great heat caused apple-trees to become fastigate; and we thus see the same result following from the effects of climate and from some unknown cause.¹⁵⁰

In foliage we have variegated leaves which are often inherited; dark purple or red leaves, as in the hazel, barberry, and beech, the colour in these two latter trees being sometimes strongly and sometimes weakly inherited;¹⁵¹ deeply-cut leaves; and leaves covered with prickles, as in the variety of the holly well called *ferox*, which is said to reproduce itself by seed.¹⁵² In fact, nearly all the peculiar varieties evince a tendency, more or less strongly marked, to reproduce themselves by seed.¹⁵³ This is to a certain extent the case, according to Bosc,¹⁵⁴ with three varieties of the elm, namely, the broad-leafed, lime-leafed, and twisted elm, in which latter the fibres of the wood are twisted. Even with the heterophyllous hornbeam (*Carpinus betulus*), which bears on each twig leaves of two shapes, "several plants raised from seed all retained "the same peculiarity."¹⁵⁵ I will add only one other remarkable case of variation in foliage, namely, the occurrence of two sub-varieties of the ash with simple instead of pinnated leaves, and

¹⁴⁷ 'Gardener's Chron.,' 1842, p. 36.

¹⁴⁸ Loudon's 'Arboretum et Fruticetum,' vol. iii. p. 1731.

¹⁴⁹ Ibid., vol. iv. p. 2489.

¹⁵⁰ Godron ('De l'Espèce,' tom. ii. p. 91) describes four varieties of Robinia remarkable from their manner of growth.

¹⁵¹ 'Journal of a Horticultural Tour, by Caledonian Hort. Soc.,' 1823, p. 107. Alph. De Candolle, 'Géo-

graph. Bot.,' p. 1083. Verlot, 'Sur la Production des Variétés,' 1865; p. 55 for the Barberry.

¹⁵² Loudon's 'Arboretum et Fruticetum,' vol. ii. p. 508.

¹⁵³ Verlot, 'Des Variétés,' 1865, p. 92.

¹⁵⁴ Loudon's 'Arboretum et Fruticetum,' vol. iii. p. 1376.

¹⁵⁵ 'Gardener's Chronicle,' 1841, p. 687.