Gärtner declares,[34] and his experience is of the highest value on such a point, that, when he crossed native plants which had not been cultivated, he never once saw in the offspring any new character; but that from the odd manner in which the characters derived from the parents were combined, they sometimes appeared as if new. When, on the other hand, he crossed cultivated plants, he admits that new characters occasionally appeared, but he is strongly inclined to attribute their appearance to ordinary variability, not in any way to the cross. An opposite conclusion, however, appears to me the more probable. According to Kölreuter, hybrids in the genus Mirabilis vary almost infinitely, and he describes new and singular characters in the form of the seeds, in the colour of the anthers, in the cotyledons being of immense size, in new and highly peculiar odours, in the flowers expanding early in the season, and in their closing at night. With respect to one lot of these hybrids, he remarks that they presented characters exactly the reverse of what might have been expected from their parentage.[35]

Prof. Lecoq[36] speaks strongly to the same effect in regard to this same genus, and asserts that many of the hybrids from *Mirabilis jalapa* and *multiflora* might easily be mistaken for distinct species, and adds that they differed in a greater degree than the other species of the genus, from *M. jalapa*. Herbert, also, has described[37] certain hybrid Rhododendrons as being "as *unlike all others* in "foliage, as if they had been a separate species." The common experience of floriculturists proves that the crossing and recrossing of distinct but allied plants, such as the species of Petunia, Calceolaria, Fuchsia, Verbena, &c., induces excessive variability; hence the appearance of quite new characters is probable. M. Carrière[38] has lately discussed this subject: he states that *Erythrina cristagalli* had been multiplied by seed for many years, but had not yielded any varieties: it was then crossed with the allied *E. herbacea*, and "the resistance was now overcome, and varieties were produced "with flowers of extremely different size, form, and colour."

From the general and apparently well-founded belief that the crossing of distinct species, besides commingling their characters, adds greatly to their variability, it has probably arisen that some botanists have gone so far as to maintain[39] that, when a genus includes only a single species, this when cultivated never varies. The proposition made so broadly cannot be admitted; but it is probably true that the variability of monotypic genera when culti-

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[34] 'Bastarderzeugung,' s. 249, 255, 295.

[35] 'Nova Acta, St. Petersburg,' 1794, p. 378; 1795, pp. 307, 313, 316; 1787, p. 407.

[36] 'De la Fécondation,' 1862, p. 311.

[37] 'Amaryllidaceæ,' 1837, p. 362.

[38] Abstracted in 'Gard. Chronicle,' 1860, p. 1081.

[39] This was the opinion of the elder De Candolle, as quoted in 'Dic. Class. d'Hist. Nat.,' tom. viii. p. 405. Puvis, in his work, 'De la Dégénération,' 1837, p. 37, has discussed this same point.