

Canterbury has given me a more striking case; he saved seed from a great bed of twenty-four named varieties planted in closely adjoining rows, and each variety reproduced itself truly with only sometimes a shade of difference in tint. Now in the hollyhock the pollen, which is abundant, is matured and nearly all shed before the stigma of the same flower is ready to receive it;²⁰ and as bees covered with pollen incessantly fly from plant to plant, it would appear that adjoining varieties could not escape being crossed. As, however, this does not occur, it appeared to me probable that the pollen of each variety was prepotent on its own stigma over that of all other varieties, but I have no evidence on this point. Mr. C. Turner of Slough, well known for his success in the cultivation of this plant, informs me that it is the doubleness of the flowers which prevents the bees gaining access to the pollen and stigma; and he finds that it is difficult even to cross them artificially. Whether this explanation will fully account for varieties in close proximity propagating themselves so truly by seed, I do not know.

The following cases are worth giving, as they relate to monœcious forms, which do not require, and consequently cannot have been injured by, castration. Girou de Buzareingues crossed what he designates three varieties of gourd,²¹ and asserts that their mutual fertilisation is less easy in proportion to the difference which they present. I am aware how imperfectly the forms in this group were until recently known; but Sageret,²² who ranked them according to their mutual fertility, considers the three forms above alluded to as varieties, as does a far higher authority, namely, M. Naudin.²³ Sageret²⁴ has observed that certain melons have a greater tendency, whatever the cause may be, to keep true than others; and M. Naudin, who has had such immense experience in this group, informs me that he believes that certain varieties intercross more readily than others of the same species; but he has not proved the truth of this conclusion; the frequent abortion of the pollen near Paris being one great difficulty. Nevertheless, he has grown close together, during seven years, certain forms of *Citrullus*, which, as they could be artificially crossed with perfect facility and produced fertile offspring, are ranked as varieties; but these forms when not artificially crossed kept true. Many other varieties, on the other hand, in the same group cross with such facility, as M. Naudin repeatedly insists, that without being grown far apart they cannot be kept in the least true.

Another case, though somewhat different, may be here given, as

²⁰ Kölreuter first observed this fact, 'Mém. de l'Acad. de St. Petersburg,' vol. iii. p. 127. See also C. K. Sprengel, 'Das Entdeckte Geheimniss,' s. 345.

²¹ Namely, Barbarines, Pastissons, Giraumous: 'Annal. des Sc. Nat.' tom. xxx., 1833, pp. 398 and 405.

²² 'Mémoire sur les Cucurbitaceæ,' 1826, pp. 46, 55.

²³ 'Annales des Sc. Nat.,' 4th series, tom. vi. M. Naudin considers these forms as undoubtedly varieties of *Cucurbita pepo*.

²⁴ 'Mém. Cucurb.,' p. 8.