wrinkled peas; and although he sowed these four varieties separately during several successive years, each kind always reproduced all four kinds mixed together!

With respect to the varieties not naturally intercrossing, I have ascertained that the pea, which in this respect differs from some other Leguminosæ, is perfectly fertile without the aid of insects. Yet I have seen humble-bees whilst sucking the nectar depress the keel-petals, and become so thickly dusted with pollen, that it could hardly fail to be left on the stigma of the next flower which was visited. Nevertheless, distinct varieties growing closely together rarely cross; and I have reason to believe that this is due to their stigmas being prematurely fertilised in this country by pollen from the same flower. The horticulturists who raise seed-peas are thus enabled to plant distinct varieties close together without any bad consequences; and it is certain, as I have myself found, that true seed may be saved during at least several generations under these circumstances.[88] Mr. Fitch raised, as he informs me, one variety for twenty years, and it always came true, though grown close to other varieties. From the analogy of kidney-beans I should have expected[89] that varieties thus circumstanced would have occasionally crossed; and I shall give in the eleventh chapter two cases of this having occurred, as shown (in a manner hereafter to be explained) by the pollen of the one variety having acted directly on the seeds of the other. Whether many of the new varieties which incessantly appear are due to such occasional and accidental crosses, I do not know. Nor do I know whether the short existence of almost all the numerous varieties is the result of mere change of fashion, or of their having a weak constitution, from being the product of long-continued self-fertilisation. It may, however, be noticed that several of Andrew Knight's varieties, which have endured longer than most kinds, were raised towards the close of the last century by artificial crosses; some of them, I believe, were still vigorous in 1860; but now, in 1865, a writer, speaking[90] of Knight's four kinds of marrows, says, they have acquired a famous history, but their glory has departed.

With respect to Beans (*Faba vulgaris*), I will say but little. Dr. Alefeld has given[91] short diagnostic characters of forty varieties. Everyone who has seen a collection must have been struck with the great difference in shape, thickness, proportional length and breadth, colour, and size which beans present. What a contrast between a Windsor and Horse-bean! As in the case of the pea, our existing varieties were preceded during the Bronze age in

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[88] *See* Dr. Anderson to the same effect in the 'Bath Soc. Agricultural Papers,' vol. iv. p. 87.

[89] I have published full details of experiments on this subject in the 'Gardener's Chronicle,' 1857, Oct. 25.

[90] 'Gardener's Chronicle,' 1865, p. 387.

[91] 'Bonplandia,' x., 1862, s. 348.