

exception of a few cases incidentally noticed of varying suckers in the rose, pelargonium, and chrysanthemum. I will now give a few instances of variation in subterranean buds, that is, by suckers, tubers, and bulbs; not that there is any essential difference between buds above and beneath the ground. Mr. Salter informs me that two variegated varieties of Phlox originated as suckers; but I should not have thought these worth mentioning, had not Mr. Salter found, after repeated trials, that he could not propagate them by "root-joints," whereas, the variegated *Tussilago farfara* can thus be safely propagated;⁷⁰ but this latter plant may have originated as a variegated seedling, which would account for its greater fixedness of character. The Barberry (*Berberis vulgaris*) offers an analogous case; there is a well-known variety with seedless fruit, which can be propagated by cuttings or layers; but suckers always revert to the common form, which produces fruit containing seeds.⁷¹ My father repeatedly tried this experiment, and always with the same result. I may here mention that maize and wheat sometimes produce new varieties from the stock or root, as does the sugar-cane.⁷²

Turning now to tubers: in the common Potato (*Solanum tuberosum*) a single bud or eye sometimes varies and produces a new variety; or, occasionally, and this is a much more remarkable circumstance, all the eyes in a tuber vary in the same manner and at the same time, so that the whole tuber assumes a new character. For instance, a single eye in a tuber of the old *Forty-fold potato*, which is a purple variety, was observed⁷³ to become white; this eye was cut out and planted separately, and the kind has since been largely propagated. *Kemp's potato* is properly white, but a plant in Lancashire produced two tubers which were red, and two which were white; the red

⁷⁰ M. Lemoine (quoted in 'Gard. Chron.,' 1867, p. 74) has lately observed that the *Symphytum* with variegated leaves cannot be propagated by division of the roots. He also found that out of 500 plants of a Phlox with striped flowers, which had been propagated by root-division, only seven or eight produced striped flowers. See also, on striped Pelargoniums, 'Gard. Chron.,' 1867, p. 1000.

⁷¹ Anderson's 'Recreations in Agriculture,' vol. v. p. 152.

⁷² For wheat, see 'Improvement of the Cereals,' by P. Shirreff, 1873, p. 47. For maize and sugar-cane, Carrière, *ibid.*, pp. 40, 42. With respect to the sugar-cane, Mr. J. Caldwell, of Mauritius, says ('Gardener's Chronicle,' 1874, p. 316) the

Ribbon cane has here "sported into a perfectly green cane and a perfectly red cane from the same head. I verified this myself, and saw at least 200 instances in the same plantation, and the fact has completely upset all our preconceived ideas of the difference of colour being permanent. The conversion of a striped cane into a green cane was not uncommon, but the change into a red cane universally disbelieved, and that both events should occur in the same plant incredible. I find, however, in Fleischman's 'Report on Sugar Cultivation in Louisiana for 1848, by the American Patent Office, the circumstance is mentioned, but he says he never saw it himself."

⁷³ 'Gard. Chron.,' 1857, p. 662.