

the female organs struck with sterility, whilst the male organs remain perfect. *Dianthus japonicus*, a *Passiflora*, and *Nicotiana*, have been described by Gärtner⁸⁹ as being in this unusual condition.

Monstrosities as a cause of sterility.—Great deviations of structure, even when the reproductive organs themselves are not seriously affected, sometimes cause plants to become sterile. But in other cases plants may become monstrous to an extreme degree and yet retain their full fertility. Galesio, who certainly had great experience,⁹⁰ often attributes sterility to this cause; but it may be suspected that in some of his cases sterility was the cause, and not the result, of the monstrous growths. The curious St. Valery apple, although it bears fruit, rarely produces seed. The wonderfully anomalous flowers of *Begonia frigida*, formerly described, though, they appear fit for fructification, are sterile.⁹¹ Species of *Primula* in which the calyx is brightly coloured are said⁹² to be often sterile, though I have known them to be fertile. On the other hand, Verlot gives several cases of proliferous flowers which can be propagated by seed. This was the case with a poppy, which had become monopetalous by the union of its petals.⁹³ Another extraordinary poppy, with the stamens replaced by numerous small supplementary capsules, likewise reproduces itself by seed. This has also occurred with a plant of *Saxifraga geum*, in which a series of adventitious carpels, bearing ovules on their margins, had been developed between the stamens and the normal carpels.⁹⁴ Lastly, with respect to peloric flowers, which depart wonderfully from the natural structure,—those of *Linaria vulgaris* seem generally to be more or less sterile, whilst those before described of *Antirrhinum majus*, when artificially fertilised with their own pollen, are perfectly fertile, though sterile when left to themselves, for bees are unable to crawl into the narrow tubular flower. The peloric flowers of *Corydalis solida*, according to Godron,⁹⁵ are sometimes barren and sometimes fertile; whilst those of *Gloxinia* are well known to yield plenty of seed. In our greenhouse *Pelargoniums*, the central flower of the truss is often peloric, and Mr. Masters informs me that he tried in vain during several years to get seed from these flowers. I likewise made many vain attempts, but sometimes succeeded in fertilising them with pollen from a normal

⁸⁹ 'Bastarderzeugung,' s. 356.

⁹⁰ 'Teoria della Riproduzione,' 1816, p. 84; 'Traité du Citrus,' 1811, p. 67.

⁹¹ Mr. C. W. Crocker, in 'Gard. Chronicle,' 1861, p. 1092.

⁹² Verlot, 'Des Variétés,' 1865, p. 80.

⁹³ Verlot, *ibid.*, p. 88.

⁹⁴ Prof. Allman, Brit. Assoc., quoted in the 'Phytologist,' vol. ii.

p. 483. Prof. Harvey, on the authority of Mr. Andrews, who discovered the plant, informed me that this monstrosity could be propagated by seed. With respect to the poppy, see Prof. Goeppert, as quoted in 'Journal of Horticulture,' July 1st, 1863, p. 171.

⁹⁵ 'Comptes Rendus,' Dec. 19th, 1864, p. 1039.