With respect to the part which the reproductive system takes in causing variability, we have seen in the eighteenth chapter that even slight changes in the conditions of life have a remarkable power in causing a greater or less degree of sterility. Hence it seems not improbable that beings generated through a system so easily affected should themselves be affected, or should fail to inherit, or inherit in excess, characters proper to their parents. We know that certain groups of organic beings, but with exceptions in each group, have their reproductive systems much more easily affected by changed conditions than other groups; for instance, carnivorous birds more readily than carnivorous mammals, and parrots more readily than pigeons; and this fact harmonises with the apparently capricious manner and degree in which various groups of animals and plants vary under domestication.

Kölreuter[47] was struck with the parallelism between the excessive variability of hybrids when crossed and recrossed in various ways,—these hybrids having their reproductive powers more or less affected,—and the variability of anciently cultivated plants. Max Wichura[48] has gone one step farther, and shows that with many of our highly cultivated plants, such as the hyacinth, tulip, auricula, snapdragon, potato, cabbage, &c., which there is no reason to believe have been hybridised, the anthers contain many irregular pollen-grains in the same state as in hybrids. He finds also in certain wild forms, the same coincidence between the state of the pollen and a high degree of variability, as in many species of Rubus; but in *R. cæsius* and *idæus*, which are not highly variable species, the pollen is sound. It is also notorious that many cultivated plants, such as the banana, pine-apple, bread-fruit, and others previously mentioned, have their reproductive organs so seriously affected as to be generally quite sterile; and when they do yield seed, the seedlings, judging from the large number of cultivated races which exist, must be variable in an extreme degree. These facts indicate that there is some relation between the state of the reproductive organs and a tendency to variability; but we must not conclude that the relation is strict. Although many of our highly cultivated plants may have their pollen in a deteriorated condition, yet, as we have previously seen, they yield more seeds, and our anciently domesticated animals are more prolific, than the corresponding species in a state of nature. The peacock is almost the only bird which is believed to be less fertile under domestication than in its native state, and it has varied in a remarkably small degree. From these considerations it would seem that changes in the conditions of life lead either to sterility or to variability, or to both; and not that sterility induces variability. On the whole it is probable that any cause affecting the organs of

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[47] 'Dritte Fortsetzung,' &c., 1766, s. 85.

[48] 'Die Bastardbefruchtung,' &c., 1865, s. 92: *see* also the Rev. M. J. Berkeley on the same subject, in 'Journal of Royal Hort. Soc.,' 1866, p. 80.