

indefinitely, causing diversified variations in nearly the same manner as exposure to cold or the absorption of the same poison affects different individuals in different ways. We have reason to suspect that an habitual excess of highly-nutritious food, or an excess relatively to the wear and tear of the organisation from exercise, is a powerful exciting cause of variability. When we see the symmetrical and complex outgrowths, caused by a minute drop of the poison of a gall-insect, we may believe that slight changes in the chemical nature of the sap or blood would lead to extraordinary modifications of structure.

The increased use of a muscle with its various attached parts, and the increased activity of a gland or other organ, lead to their increased development. Disuse has a contrary effect. With domesticated productions, although their organs sometimes become rudimentary through abortion, we have no reason to suppose that this has ever followed solely from disuse. With natural species, on the contrary, many organs appear to have been rendered rudimentary through disuse, aided by the principle of the economy of growth together with intercrossing. Complete abortion can be accounted for only by the hypothesis given in the last chapter, namely, the final destruction of the germs or gemmules of useless parts. This difference between species and domestic varieties may be partly accounted for by disuse having acted on the latter for an insufficient length of time, and partly from their exemption from any severe struggle for existence entailing rigid economy in the development of each part, to which all species under nature are subjected. Nevertheless the law of compensation or balancement, which likewise depends on the economy of growth, apparently has affected to a certain extent our domesticated productions.

As almost every part of the organisation becomes highly variable under domestication, and as variations are easily selected both consciously and unconsciously, it is very difficult to distinguish between the effects of the selection of indefinite variations and the direct action of the conditions of life. For instance, it is possible that the feet of our water-dogs and of the American dogs which have to travel much