

variation to make a sound classification. The action of changed conditions, whether leading to definite or indefinite results, is a totally distinct consideration from the effects of selection; for selection depends on the preservation by man of certain individuals, or on their survival under various and complex natural circumstances, and has no relation whatever to the primary cause of each particular variation.

I will first give in detail all the facts which I have been able to collect, rendering it probable that climate, food, &c., have acted so definitely and powerfully on the organisation of our domesticated productions, that new sub-varieties or races have been thus formed without the aid of selection by man or nature. I will then give the facts and considerations opposed to this conclusion, and finally we will weigh, as fairly as we can, the evidence on both sides.

When we reflect that distinct races of almost all our domesticated animals exist in each kingdom of Europe, and formerly even in each district of England, we are at first strongly inclined to attribute their origin to the definite action of the physical conditions of each country; and this has been the conclusion of many authors. But we should bear in mind that man annually has to choose which animals shall be preserved for breeding, and which shall be slaughtered. We have also seen that both methodical and unconscious selection were formerly practised, and are now occasionally practised by the most barbarous races, to a much greater extent than might have been anticipated. Hence it is difficult to judge how far differences in the conditions between, for instance, the several districts in England, have sufficed to modify the breeds which have been reared in each. It may be argued that, as numerous wild animals and plants have ranged during many ages throughout Great Britain, and still retain the same character, the difference in conditions between the several districts could not have modified in a marked manner the various native races of cattle, sheep, pigs, and horses. The same difficulty of distinguishing between the effects of natural selection and the definite action of external conditions is encountered in a still higher degree when we compare closely allied species inhabiting two countries, such as North America