

prizes given for highly improved breeds, in comparison with those given for old breeds which are not now undergoing rapid improvement, have been fully justified. Nathusius makes<sup>56</sup> a similar remark when discussing the less uniform character of improved Shorthorn cattle and of the English horse, in comparison, for example, with the unennobled cattle of Hungary, or with the horses of the Asiatic steppes. This want of uniformity in the parts which at the time are undergoing selection chiefly depends on the strength of the principle of reversion; but it likewise depends to a certain extent on the continued variability of the parts which have recently varied. That the same parts do continue varying in the same manner we must admit, for if it were not so, there could be no improvement beyond an early standard of excellence, and we know that such improvement is not only possible, but is of general occurrence.

As a consequence of continued variability, and more especially of reversion, all highly improved races, if neglected or not subjected to incessant selection, soon degenerate. Youatt gives a curious instance of this in some cattle formerly kept in Glamorganshire; but in this case the cattle were not fed with sufficient care. Mr. Baker, in his memoir on the Horse, sums up: "It must have been observed in the preceding pages that, whenever there has been neglect, the breed has proportionally deteriorated."<sup>57</sup> If a considerable number of improved cattle, sheep, or other animals of the same race, were allowed to breed freely together, with no selection, but with no change in their condition of life, there can be no doubt that after a score or hundred generations they would be very far from excellent of their kind; but, from what we see of the many common races of dogs, cattle, fowls, pigeons, &c., which without any particular care have long retained nearly the same character, we have no grounds for believing that they would altogether depart from their type.

It is a general belief amongst breeders that characters of all kinds become fixed by long-continued inheritance. But I

<sup>56</sup> 'Ueber Shorthorn Rindvieh,' 1857, s. 51.

<sup>57</sup> 'The Veterinary,' vol. xiii. p.

720. For the Glamorganshire cattle, see Youatt on Cattle, p. 51