

I have received, this seems likewise to be the case to a certain extent with sheep in Australia.

Climate definitely influences the hairy covering of animals; in the West Indies a great change is produced in the fleece of sheep, in about three generations. Dr. Falconer states³¹ that the Thibet mastiff and goat, when brought down from the Himalaya to Kashmir, lose their fine wool. At Angora not only goats, but shepherd-dogs and cats, have fine fleecy hair, and Mr. Ainsworth³² attributes the thickness of the fleece to the severe winters, and its silky lustre to the hot summers. Burnes states positively³³ that the Karakool sheep lose their peculiar black curled fleeces when removed into any other country. Even within the limits of England, I have been assured that the wool of two breeds of sheep was slightly changed by the flocks being pastured in different localities.³⁴ It has been asserted on good authority³⁵ that horses kept during several years in the deep coal-mines of Belgium become covered with velvety hair, almost like that on the mole. These cases probably stand in close relation to the natural change of coat in winter and summer. Naked varieties of several domestic animals have occasionally appeared; but there is no reason to believe that this is in any way related to the nature of the climate to which they have been exposed.³⁶

It appears at first sight probable that the increased size, the tendency to fatten, the early maturity and altered forms of our improved cattle, sheep, and pigs, have directly resulted from their abundant supply of food. This is the opinion of many competent judges, and probably is to a great extent true. But as far as form is concerned, we must not overlook the more potent influence of lessened use on the limbs and lungs. We see, moreover, as far as size is concerned, that selection is apparently a more powerful agent than a large supply of food, for we can thus only account for the existence, as remarked to me by Mr. Blyth, of the largest and smallest breeds of sheep in the same country, of Cochin-China fowls and Bantams, of small Tumbler and large Runt pigeons, all kept together and supplied with abundant nourishment. Nevertheless there can be little doubt that our domesticated animals have been modified, independently of the increased or lessened use of parts, by the conditions to which they have been subjected, without the aid of selection. For instance, Prof. Rüttimeyer³⁷ shows that the bones of

³¹ 'Natural History Review,' 1862, p. 113.

³² 'Journal of Roy. Geographical Soc.,' vol. ix., 1839, p. 275.

³³ 'Travels in Bokhara,' vol. iii. p. 151.

³⁴ See also, on the influence of marshy pastures on the wool, Godron, 'L'Espèce,' tom. ii. p. 22.

³⁵ Isidore Geoffroy Saint-Hilaire,

'Hist. Nat. Gén.,' tom. iii. p. 438.

³⁶ Azara has made some good remarks on this subject, 'Quadrupèdes du Paraguay,' tom. ii. p. 337. See an account of a family of naked mice produced in England, 'Proc. Zoolog. Soc.,' 1856, p. 38.

³⁷ 'Die Fauna der Pfahlbauten,' 1861, s. 15.