

of the conditions of life to which they have been exposed than almost any other domestic animal. According to Pallas, and more recently according to Erman, the fat-tailed Kirghisian sheep, when bred for a few generations in Russia, degenerate, and the mass of fat dwindles away, "the scanty and bitter herbage of the steppes seems so essential to their development." Pallas makes an analogous statement with respect to one of the Crimean breeds. Burnes states that the Karakool breed, which produces a fine, curled, black, and valuable fleece, when removed from its own canton near Bokhara to Persia or to other quarters, loses its peculiar fleece.⁹¹ In all such cases, however, it may be that a change of any kind in the conditions of life causes variability and consequent loss of character, and not that certain conditions are necessary for the development of certain characters.

Great heat, however, seems to act directly on the fleece: several accounts have been published of the change which sheep imported from Europe undergo in the West Indies. Dr. Nicholson of Antigua informs me that, after the third generation, the wool disappears from the whole body, except over the loins; and the animal then appears like a goat with a dirty door-mat on its back. A similar change is said to take place on the west coast of Africa.⁹² On the other hand, many wool-bearing sheep live on the hot plains of India. Roulin asserts that in the lower and heated valleys of the Cordillera, if the lambs are sheared as soon as the wool has grown to a certain thickness, all goes on afterwards as usual; but if not sheared, the wool detaches itself in flakes, and short shining hair like that on a goat is produced ever afterwards. This curious result seems merely to be an exaggerated tendency natural to the Merino breed, for as a

⁹¹ Erman's 'Travels in Siberia' (Eng. trans.), vol. i. p. 228. For Pallas on the fat-tailed sheep, I quote from Anderson's account of the 'Sheep of Russia,' 1794, p. 34. With respect to the Crimean sheep, see Pallas' 'Travels' (Eng. trans.), vol. ii. p. 454. For the Karakool sheep, see Burnes' 'Travels in Bokhara,' vol. iii. p. 151.

⁹² See Report of the Directors of

the Sierra Leone Company, as quoted in White's 'Gradation of Man,' p. 95. With respect to the change which sheep undergo in the West Indies, see also Dr. Davy, in 'Edin. New. Phil. Journal,' Jan. 1852. For the statement made by Roulin, see 'Mém. de l'Institut présent. par divers Savans.' tom. vi., 1835, p. 347.