

definite variability, that several generations must be subjected to changed habits for any appreciable result. Our domestic fowls, ducks, and geese have almost lost, not only in the individual but in the race, their power of flight; for we do not see a young fowl, when frightened, take flight like a young pheasant. Hence I was led carefully to compare the limb-bones of fowls, ducks, pigeons, and rabbits, with the same bones in the wild parent-species. As the measurements and weights were fully given in the earlier chapters I need here only recapitulate the results. With domestic pigeons, the length of the sternum, the prominence of its crest, the length of the scapulæ and furculum, the length of the wings as measured from tip to tip of the radii, are all reduced relatively to the same parts in the wild pigeon. The wing and tail feathers, however, are increased in length, but this may have as little connection with the use of the wings or tail, as the lengthened hair on a dog with the amount of exercise which it has habitually taken. The feet of pigeons, except in the long-beaked races, are reduced in size. With fowls the crest of the sternum is less prominent, and is often distorted or monstrous; the wing-bones have become lighter relatively to the leg-bones, and are apparently a little shorter in comparison with those of the parent-form, the *Gallus bankiva*. With ducks, the crest of the sternum is affected in the same manner as in the foregoing cases: the furculum, coracoids, and scapulæ are all reduced in weight relatively to the whole skeleton: the bones of the wings are shorter and lighter, and the bones of the legs longer and heavier, relatively to each other, and relatively to the whole skeleton, in comparison with the same bones in the wild-duck. The decreased weight and size of the bones, in the foregoing cases, is probably the indirect result of the reaction of the weakened muscles on the bones. I failed to compare the feathers of the wings of the tame and wild duck; but Gloger²¹ asserts that in the wild duck the tips of the wing-feathers reach almost to the end of the tail, whilst in the domestic duck they often hardly reach to its base. He remarks also on the greater thickness of the legs, and says that the swimming membrane between the toes is reduced; but I was not able to detect this latter difference.

With the domesticated rabbit the body, together with the whole skeleton, is generally larger and heavier than in the wild animal, and the leg-bones are heavier in due proportion; but whatever standard of comparison be taken, neither the leg-bones nor the scapulæ have increased in length proportionally with the increased dimensions of the rest of the skeleton. The skull has become in a marked manner narrower, and, from the measurements of its capacity formerly given, we may conclude, that this narrowness results from the decreased size of the brain, consequent on the mentally inactive life led by these closely-confined animals.

We have seen in the eighth chapter that silk-moths, which have

²¹ 'Das Abänderung der Vögel,' 1833, s. 74.