

bility. The simple fact of almost all our cultivated plants and domesticated animals having varied in all places and at all times, leads to this conclusion. Seeds taken from common English forest-trees, grown under their native climate, not highly manured or otherwise artificially treated, yield seedlings which vary much, as may be seen in every extensive seed-bed. I have shown in a former chapter what a number of well-marked and singular varieties the thorn (*Crataegus oxyantha*) has produced: yet this tree has been subjected to hardly any cultivation. In Staffordshire I carefully examined a large number of two British plants, namely *Geranium phæum* and *pyrenaicum*, which have never been highly cultivated. These plants had spread spontaneously by seed from a common garden into an open plantation; and the seedlings varied in almost every single character, both in their flower and foliage, to a degree which I have never seen exceeded; yet they could not have been exposed to any great change in their conditions.

With respect to animals, Azara has remarked with much surprise,<sup>12</sup> that, whilst the feral horses on the Pampas are always of one of three colours, and the cattle always of a uniform colour, yet these animals, when bred on the unenclosed estancias, though kept in a state which can hardly be called domesticated, and apparently exposed to almost identically the same conditions as when they are feral, nevertheless display a great diversity of colour. So again in India several species of fresh-water fish are only so far treated artificially, that they are reared in great tanks; but this small change is sufficient to induce much variability.<sup>13</sup>

Some facts on the effects of grafting, in regard to the variability of trees, deserve attention. Cabanis asserts that when certain pears are grafted on the quince, their seeds yield a greater number of varieties than do the seeds of the same variety of pear when grafted on the wild pear.<sup>14</sup> But as the pear and quince are distinct species, though so closely related

<sup>12</sup> 'Quadrupèdes du Paraguay,' 1801, tom. ii. p. 319.

<sup>13</sup> M'Clelland on Indian Cyprinidæ, 'Asiatic Researches,' vol. xix. part ii.,

1839, pp. 266, 268, 313.

<sup>14</sup> Quoted by Sageret, 'Pom. Phys.' 1830, p. 43. This statement, however, is not believed by Decaisne.