"wards the keepers frequently caught cross-bred rats, at "first half-breds, afterwards with less of the character of the "snake-rat, till at length all traces of it disappeared.[8] On the other hand, in some parts of London, especially near the docks, where fresh rats are frequently imported, an endless variety of intermediate forms may be found between the brown, black, and snake rat, which are all three usually ranked as distinct species.

How many generations are necessary for one species or race to absorb another by repeated crosses has often been discussed;[9] and the requisite number has probably been much exaggerated. Some writers have maintained that a dozen or score, or even more generations, are necessary; but this in itself is improbable, for in the tenth generation there would be only 1-1024th part of foreign blood in the offspring. Gärtner found,[10] that with plants, one species could be made to absorb another in from three to five generations, and he believes that this could always be effected in from six to seven generations. In one instance, however, Kölreuter[11] speaks of the offspring of *Mirabilis vulgaris*, crossed during eight successive generations by *M. longiflora*, as resembling this latter species so closely, that the most scrupulous observer could detect "vix aliquam notabilem differentiam" or, as he says, he succeeded, "ad plenariam fere transmutationem." But this expression shows that the act of absorption was not even then absolutely complete, though these crossed plants contained only the 1-256th part of *M. vulgaris*. The conclusions of such accurate observers as Gärtner and Kölreuter are of far higher worth than those made without scientific aim by breeders. The most precise account which I have met with is given by Stonehenge,[12] and is illustrated by photographs. Mr. Hanley crossed a greyhound bitch with a bulldog; the offspring in each succeeding generation being recrossed with first-rate greyhounds. As Stonehenge remarks,

[8] Mr. S. J. Salter, 'Journal Linn. Soc.,' vo.. vi., 1862, p. 71.

[9] Sturm, 'Ueber Racen, &c.,' 1825, s. 107. Bronn, 'Geschichte der Natur,' b. ii. s. 170, gives a table of the proportions of blood after successive crosses. Dr. P. Lucas, 'L'Hérédité Nat.,' tom. ii. p. 308.

[10] 'Bastarderzeugung,' s. 463, 470.

[11] 'Nova Acta Petrop.,' 1794, p. 393: *see* also previous volume.

[12] 'The Dog,' 1867, pp. 179–184.