

arisen since man first domesticated the pigeon. On the ordinary view, variability is due to changed conditions of life; on the Pallasian doctrine, variability, or the appearance of new characters, is due to some mysterious effect from the crossing of two species, neither of which possesses the characters in question. In some few instances it is possible that well-marked races may have been formed by crossing; for instance, a Barb might perhaps be formed by a cross between a long-beaked Carrier, having large eye-wattles, and some short-beaked pigeon. That many races have been in some degree modified by crossing, and that certain varieties which are distinguished only by peculiar tints have arisen from crosses between differently-coloured varieties, is almost certain. On the doctrine, therefore, that the chief races owe their differences to their descent from distinct species, we must admit that at least eight or nine, or more probably a dozen species, all having the same habit of breeding and roosting on rocks and living in society, either now exist somewhere, or formerly existed, but have become extinct as wild birds. Considering how carefully wild pigeons have been collected throughout the world, and what conspicuous birds they are, especially when frequenting rocks, it is extremely improbable that eight or nine species, which were long ago domesticated and therefore must have inhabited some anciently known country, should still exist in the wild state and be unknown to ornithologists.

The hypothesis that such species formerly existed, but have become extinct, is in some slight degree more probable. But the extinction of so many species within the historical period is a bold hypothesis, seeing how little influence man has had in exterminating the common rock-pigeon, which agrees in all its habits of life with the domestic races. The *C. livia* now exists and flourishes on the small northern islands of Faroe, on many islands off the coast of Scotland, on Sardinia, and the shores of the Mediterranean, and in the centre of India. Fanciers have sometimes imagined that the several supposed parent-species were originally confined to small islands, and thus might readily have been exterminated; but the facts just given do not favour the probability of their extinction, even on small islands