

and out of fifty-seven pens lately (1860) exhibited at the Crystal Palace, all had beards. So it has been in many other cases. But in all cases the judges order only what is occasionally produced and what can be improved and rendered constant by selection. The steady increase in weight during the last few years in our fowls, turkeys, ducks, and geese is notorious; "six-pound ducks are now common, whereas four pounds was formerly the average." As the time required to make a change has not often been recorded, it may be worth mentioning that it took Mr. Wicking thirteen years to put a clean white head on an almond tumbler's body, "a triumph," says another fancier, "of which he may be justly proud."²⁰

Mr. Tollet, of Betley Hall, selected cows, and especially bulls, descended from good milkers, for the sole purpose of improving his cattle for the production of cheese; he steadily tested the milk with the lactometer, and in eight years he increased, as I was informed by him, the product in proportion of four to three. Here is a curious case²¹ of steady but slow progress, with the end not as yet fully attained: in 1784 a race of silkworms was introduced into France, in which one hundred in the thousand failed to produce white cocoons; but now after careful selection during sixty-five generations, the proportion of yellow cocoons has been reduced to thirty-five in the thousand.

With plants selection has been followed with the same good result as with animals. But the process is simpler, for plants in the great majority of cases bear both sexes. Nevertheless, with most kinds it is necessary to take as much care to prevent crosses as with animals or unisexual plants; but with some plants, such as peas, this care is not necessary. With all improved plants, excepting of course those which are propagated by buds, cuttings, &c., it is almost indispensable to examine the seedlings and destroy those which depart from the proper type. This is called "roguing," and is, in fact, a form of selection, like the rejection of inferior animals. Experienced horticulturists and agriculturists

²⁰ 'Poultry Chronicle,' vol. ii., 1855, p. 596.

²¹ Isid. Geoffroy St.-Hilaire, 'Hist. Nat. Gén.,' tom. iii. p. 254.