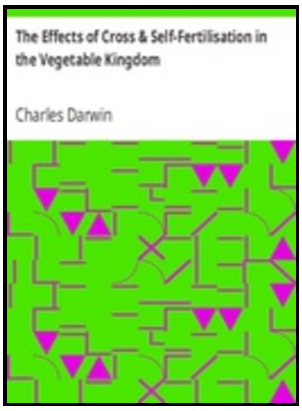
Effects of cross and self fertilisation in the vegetable kingdom.

D. Appleton and company - Details



Description: -
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Plants -- Variation.
Pollination.effects of cross and self fertilisation in the vegetable kingdom.
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The effects of cross and self fertilisation in the vegetable kingdom. : Darwin, Charles, 1809

As it is now evident that the tall white variety transmitted its characters faithfully, and as the self-fertilised plants consisted exclusively of this variety, it was manifest that they would always exceed in height the crossed plants which belonged chiefly to the original shorter varieties. Early in the following year I acted differently, and fertilised seven flowers, very soon after their expansion, with pollen from another plant, and obtained six capsules.

Darwin, C. R. 1876. The effects of cross and self fertilisation in the vegetable kingdom. London: John Murray.

The pots were all put under a net to exclude insects, and the crossed plants produced spontaneously only fifty-five capsules, whilst the self-fertilised plants produced eighty-one capsules, or as 100 to 147. The experience of the plants in pots does not help us to determine that law, because the observations of such plants are too few to enable us to lay down more than the middle terms of the series to which they belong with any sort of accuracy, whereas the cases we are now considering refer to one of its extremities. Petunia violacea, crossed and self-fertilised plants compared for four generations.

The Effects of Cross & Self

Again, there is a class, in which the ovules absolutely refuse to be fertilised by pollen from the same plant, but can be fertilised by pollen from any other individual of the same species. From my own observations on plants, guided to a certain extent by the experience of the breeders of animals, I became convinced many years ago that it is a general law of nature that flowers are adapted to be crossed, at least occasionally, by pollen from a distinct plant.

Effects of Cross and Self Fertilization in the Vegetable Kingdom

Skutki krzyżowania i samozapładniania w świecie roślin. It should be observed that this difference is not due to a few of the crossed plants being extremely tall, or to a few of the self-fertilised being extremely short, but to all the crossed plants attaining a greater height than their antagonists.

The Effects of Cross and Self

The flowers of the one kind are minute and completely closed, so that they cannot possibly be crossed; but they are abundantly fertile, although producing an extremely small quantity of pollen. In some few cases of spontaneously self-fertile species, the flowers were allowed to fertilise themselves under the net; and in still fewer cases uncovered plants were allowed to be freely crossed by the insects which incessantly visited them. In the following summer all the self-fertilised and some of the quasi-crossed plants were covered by a net.

The effects of cross and self fertilisation in the vegetable kingdom. : Darwin, Charles, 1809

The one form bears small flowers constructed for self-fertilisation ; whilst the other bears larger and much more conspicuous flowers plainly constructed for cross-fertilisation by the aid of insects; and without their aid these produce no seed. A few of these plants of both lots were transplanted into a large pot with plenty of good earth, and the self-fertilised plants, not now being subjected to severe competition, grew during the following year as tall as the crossed plants; but from a case which follows it is doubtful whether they would have long continued equal. This difference shows in the clearest manner the enormous benefit which these plants derived from a cross with another plant belonging to the same sub-variety, but to a fresh stock, and grown during at least the three previous generations under somewhat different conditions.

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