

The same naturalist found in Brazil three plants of a *Bignonia* growing near together. He fertilised twenty-nine flowerets on one of them with their own pollen, and they did not set a single capsule. Thirty flowers were then fertilised with pollen from a distinct plant, one of the three, and they yielded only two capsules. Lastly, five flowers were fertilised with pollen from a fourth plant growing at a distance, and all five produced capsules. Fritz Müller thinks that the three plants which grew near one another were probably seedlings from the same parent, and that from being closely related, they acted very feebly on one another. This view is extremely probable, for he has since shown in a remarkable paper,<sup>71</sup> that in the case of some Brazilian species of *Abutilon*, which are self-sterile, and between which he raised some complex hybrids, that these, if near relatives, were much less fertile *inter se*, than when not closely related.

We now come to cases closely analogous with those just given, but different in so far that only certain individuals of the species are self-sterile. This self-impotence does not depend on the pollen or ovules being in an unfit state for fertilisation, for both have been found effective in union with other plants of the same or of a distinct species. The fact of plants having acquired so peculiar a constitution, that they can be fertilised more readily by the pollen of a distinct species than by their own, is exactly the reverse of what occurs with all ordinary species. For in the latter the two sexual elements of the same individual plant are of course capable of freely acting on each other; but are so constituted that they are more or less impotent when brought into union with the sexual elements of a distinct species, and produce more or less sterile hybrids.

Gärtner experimented on two plants of *Lobelia fulgens*, brought from separate places, and found<sup>72</sup> that their pollen was good, for he fertilised with it *L. cardinalis* and *syphilitica*; their ovules were likewise good, for they were fertilised by the pollen of these same two species; but these two plants of *L. fulgens* could not be fertilised by their own pollen, as can generally be effected with perfect ease with this species. Again, the pollen of a plant of *Verbascum nigrum* grown in a pot was found by Gärtner<sup>73</sup> capable of fertilising *V. lychnitis* and *V. austriacum*; the ovules could be fertilised by the

<sup>71</sup> 'Jenaische Zeitschrift für Naturwiss.' B. vii. p. 22, 1872, and p. 441, 1873. A large part of this paper has been translated in the 'American

Naturalist,' 1874, p. 223.

<sup>72</sup> 'Bastarderzeugung,' s. 64, 357.

<sup>73</sup> Ibid., s. 357.