

BOTANY AND VEGETABLE PHYSIOLOGY.

The Existence of two Forms in several Species of Linum.—The beautiful discoveries of Mr. Darwin relative to the fertilization of Orchids and Primulæ have led him to inquire into the nature of this process in the flax tribe, and the results of his researches are quite as remarkable and interesting as any he has yet put forward. He finds that in the large flowered crimson flax two distinct forms of flower exist; in one the pistil being twice as long as the united styles and stigmas of the other. In that with the long pistil, the styles are erect, but in the other the five stigmas diverge and pass between the stamens to the base of the corolla tube. He has observed that the pollen of either form is unable to fertilize its own ovules, the stigma producing no action upon it; but when pollen from an opposite form is placed upon the stigma, the tubes are developed in a few hours. In *Linum perenne* the same two forms, long and short-styled, are present; but the stamens of the long-styled flowers are only half the length of those with the short styles; moreover, in the first variety, *the stigmas turn round so as to face the circumference of the flower about the time it expands.* What is the object of this divergence of stigmas in *L. grandiflorum*? The nectar secreted by the flower being found at the outer base of the stamens, the insect is obliged to insert its proboscis between the petals and stamens, and thus the foreign pollen is attached to the stigmatic surface. As in *Linum perenne* the stamens are of different lengths, so will pollen of different kinds be attached to the insect at two distinct levels, and will thus be brought in contact with the stigmas to which it is adapted. Mr. Darwin remarks:—“*In plants which are fertilized by the wind, the flowers do not secrete nectar; their pollen is too incoherent to be easily collected by insects; they have not the bright-coloured corollas to serve as guides, and they are not, so far as I have seen, visited by insects.*”—“*Journal of the Linn. Soc.*”