

FERTILISATION OF GLOSSOSTIGMA

THE following letter to Mr. Darwin has been forwarded to us by him for publication :—

“ Museum, Auckland, October 23, 1877

“ My Dear Sir,—I forward to you a copy of a paper on the fertilisation of *Selliera*, one of the *Gooeniaceæ*, which perhaps you may care to glance over. When I wrote it I did not know of your notes on *Leschenaultia*, published in the *Gardener's Chronicle* for 1871. In both plants the pollen is shed before the expansion of the flower, and neatly collected in the indusium, but in *Selliera* the stigma is situated within the indusium, and by its gradual upward growth after the flower expands slowly forces out the pollen, which is then transferred by insects to older

flowers. When mature, the stigma protrudes considerably beyond the indusium. This appears to differ entirely from what takes place in *Leschenaultia*.

"I have recently been much interested with the curious irritability displayed by the stigma of *Glossostigma elatinoïdes*, one of the Scrophularinæ. The style is dilated towards its apex into a broad spoon-shaped stigma, which, when the flower expands, is closely doubled over the four stamens, entirely concealing them from view. If the front of the bent part of the style is touched it at once springs up, uncovering the stamens, and moves back to the upper lobe of the corolla, to which it becomes closely applied. In this position it remains for a few minutes, and then slowly moves back to the stamens and curves over them as at first. It appears to me that this irritability of the stigma is simply a contrivance to insure cross-fertilisation, for an insect crawling into the flower must inevitably touch the stigma, which would then uncover the stamens. On withdrawing, the insect would be certain to dust itself with pollen, but it would not by this effect the fertilisation of the flower, for the stigma would be then closely applied to the upper lobe of the corolla, entirely out of its way. If the insect were, however, to visit another flower it is evident that it must come into contact with the stigma at its first entrance and would doubtless leave some pollen thereon. The movement of the stigma is remarkably rapid, and its apex must pass through an angle of at least 180° . I have been unable to find a record of a similar case, or of so pronounced a degree of irritability in the stigma of any plant. The movement of the lobes of the stigma in *Mimulus* is much weaker, and is through a much less angle.

Yours faithfully,

"T. F. CHEESEMAN

"Charles Darwin Esq., F.R.S."