FERTILIZATION OF *OPHRYS APIFERA*.

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Darwin ('British and Foreign Orchids,' p. 63) figures and describes the fertilization of *Ophrys apifera*. He describes the remarkably long, thin, and flexible caudicles of the pollinia, necessarily curved forward at their upper ends. He continues, "The anther-cells naturally open soon after the flower is fully expanded, and the thick ends of the pollinia fall out, the viscid discs still remaining in their pouches"; and (on the next page, 65) "we see that the anther-cells naturally open, and that the masses of pollen, from their weight, slowly fall down." In the accompanying plate (fig. vii.) the very long caudicles are shown curved after the pollinia have fallen out of the anther-cells, and sustaining aloft (though themselves curved) the pollinia. Darwin appears to have been somewhat surprised at these phenomena; he adverts to the slightness of the weight of the pollinia, and the remarkable thinness of the caudicles.

I picked last summer a 3-flowered spike of the Bee Orchis at Box Hill; in the lowest flower the pollinia had fallen on the lip; in the flower above, imperfectly expanded, the anther was curved lower over the rostellum, but the two caudicles were out of the base of the anther-cells and were drawn tightly straight across from the rostellum (where they are firmly permanently attached) to the base of the pollinia; the appearance was as of the arched neck of a horse pulled in tightly by a low hand.

Subsequently, in the Savoy, I met with numerous many-flowered spikes of the Bee Orchis; and in the field I noticed that, in the lowest flower with the pollinia still included in the anther-cells, the caudicles were drawn out of the bases of the anther-cells and quite straight.

Later, some fresh spikes of the Bee Orchis were sent me by Miss Loscombe from Andover, One detached opening flower I laid on its side; on raising carefully the sepal, the anther straightened (as I imagine) imperceptibly; the pollinia were drawn out by the tension of the caudicles. In this position of the flower they could not have fallen out by their own weight. It is, I need not say, quite possible that I may in raising the sepal have disturbed the anther-cell.

Darwin appears to have examined very many flowers of *Ophrys apifera*, in several localities, and during many seasons; he also kept living plants in his room, and observed the process of fertilization day by day. It is therefore very improbable that such an observer would be mistaken, even on the lesser points of the phenomena. But unless the spontaneous opening of the anther-cells to allow the pollinia to fall out by the action of gravity is a very rapid action, I cannot understand how I saw nothing of it. My observations were so scanty that I merely made a mental note of them, with the intention of devoting a little more time to the points in question

next season. But I find that it is not likely that I shall have an opportunity of so doing, and I therefore write this note in order to suggest to British botanists that, even after the admirable observations of Darwin, there is still room for further investigation of the Bee Ophrys.