—ON THE FERTILIZATION OF ORCHIDS BY INSECTS: *Darwin*. Second Edition, Revised, with Illustrations. New York: D. Appleton & Co.—The wonderful singularity and diversity of the forms of Orchids led Dr. Sprengel as early as 1793 to publish a detailed account of them in his wonderful and valuable book, "Das entdeckte Geheimniss der Natur." Later researches upon the same subject confirmed some of Sprengel's conclusions, and showed the fallacy of others. The object of the present treatise is, in the words of Mr. Darwin, "to show that the contrivances by which Orchids are fertilized are as varied and almost as perfect as any of the most beautiful adaptations in the animal kingdom; and secondly, to show that these contrivances have for their main object the fertilization of the flowers with pollen brought by insects from a distinct plant." In brief, the method of fertilization is this. We choose as a specimen the *Orchis muscula*, the first one examined at length in the text. A two-celled anther carries the pollen or male vivifying element, which, instead of being fine granulated powder as in all our common plants, is united in each cell into a pollen-mass or *pollinium*, consisting of a number of packets of pollen grains combined by thin, elastic threads. The confluence of these threads at the lower end of the pollen-mass forms the *caudicle*, to whose base is attached a viscid disk. The two pollinia are protected from exposure by the *rostellum*, a spherical or pouch-shaped projection with a very tender membraneous exterior. Many Orchids secrete a marvelous supply of nectar, one variety possessing a nectary above eleven inches long. The insect, attracted by the beautiful outer envelope called the *labellum*, lights upon it, and inserts his proboscis into the nectary. It is impossible for the insect to reach the sweet fluid contained in the nectary without rupturing the rostellum. A pollinium is protruded, and the viscid disk at its lower end is firmly pasted upon the proboscis of the insect. The pollen-mass will remain firmly cemented to the forehead of the insect until it meets the stigma of a fully matured flower. The grains are allowed to scatter through the rupture of the thin, elastic threads which have bound them together, and the process of fertilization is complete. The several varieties, *Ophreæ*, *Arethusæ*, etc., and the Homologies of Orchids are critically examined, and the results of the experiments are embodied in this work. In conclusion, the author says that considering how precious a substance pollen is, considering the proximity of the male and female organs, the anther and stigma, and how easy and safe self-fertilization would be, the fact that, nevertheless, Orchids are fertilized by insect agency, is the voice of Nature telling us that she abhors perpetual self-fertilization. The book is a marvel of pains-taking, laborious care, and is calculated to excite our admiration of Mr. Darwin, but incomparably more so of the many beautiful contrivances of the vegetable kingdom. For sale by Sheehan & Co.