

BOOK NOTICE

BOTANY—THE ARTIFICIAL CULTIVATION OF TRUFFLES.

Boulanger, M. Emile. Germination de l'Ascospore de la Truffe : 4to. pp. 20, 20 plates, Paris, France, 1903.

Until quite recently, as may be seen in books of botany, the early stages of the Truffles were unknown. This, however, owing to the skill and careful work of the author of the above pamphlet, is no longer the case. Mr. Boulanger has recently given us the results of his patient scientific studies on the germination of the spores of two species of edible truffles, and there is no doubt that, before long, developments of great economic importance in the cultivation of these fungi may be the outcome of his studies. One of the species used by Mr. Boulanger in his investigations is the Black-spored Truffle (*Tuber melanosporum*), which is the truffle most highly valued by epicures; the other the Hook-bearing Truffle (*T. uncinatum*), although also edible, is less esteemed.

The author in 1898 first obtained the germination of the spores in sterilized water, and from these, on slices of cooked carrots sunk in the earth, he grew the mycelium or spawn. This was afterwards produced on the earth itself and on other media; then, finally, from the mycelium he succeeded in growing fully developed truffles in his laboratory. These, it is true, lacked the characteristic taste and smell which give truffles their gastronomic value; and, moreover, they were misshapen; but, nevertheless, they were true adult perithecia of *Tuber uncinatum* containing normal asci.

The next step was to try the practical cultivation of the fungi in the open air under the conditions in which truffles grow in nature. This was done in 1900 on seven acres of an old oak forest at Etampes, near Paris; pieces of raw carrot impregnated with the spawn were buried at the base of oak trees and a special fertilizer (6 per cent. potassium sulphate and 6 per cent. superphosphate of lime) applied on the surface of the soil. On the 7th May, 1903, specimens of truffles of the second crop from these cultures were exhibited by Mr. Boulanger at the meeting of the Mycological Society of France. These specimens grown under natural conditions out of doors, it may be remarked, had the fully developed aroma and taste of commercial truffles, although, as stated above, those grown in the laboratory from similar stock did not develop those important characteristics.

Two fine plates accompany the pamphlet and show the spores in the different stages of germination. This work is an important contribution both to science and horticulture.

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