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Outlines of British Fungology

Berkeley, Miles Joseph

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CHAPTER XI.

CULTIVATION OF FUNGI.

WERE Fungi objects of more general interest, there is little doubt that in skilful hands a great many species would admit of cultivation. At present, however, except under the care of a few inquirers into their mode of growth and fructification, attempts have been made to propagate a very few kinds only.

The three to which attention has been directed most are the Truffle* (Plate 23, fig. 2), *Boletus edulis* (Plate 15, fig. 6), and the common Mushroom (Plate 10, fig. 2). A good deal has been written respecting the cultivation of Truffles, and one person even professed that he should soon have Truffle spawn for sale; but the treatises which have appeared have been, for the most part, mere catchpenny productions, while the experiments instituted have been generally ill-directed. In one case which promised a good deal, and of which I was invited to witness the result, it was found on inquiry that experiments had been made with the refuse Truffles of one of the Italian shops in London, which had been artificially dried, and which had therefore for the most part lost their powers of vegetation. But even in this case there were signs of the

* These attempts have been confined principally to *Tuber melanosporum*, *castivum*, and perhaps *mesentericum*.

production of spawn, and, from what I saw of it, I felt almost assured that in better hands the cultivation would at last succeed. The grand point is to have plenty of lime in the soil, without which there is little, if any, hope of Truffles. A sort of cultivation is practised in Poitou, which consists in enclosing a tract of downs, and sowing it with acorns, and in the course of a few years a plentiful crop is almost uniformly the result. The Viscomte Noé, in the south of France, succeeded in raising Truffles in his woods by irrigating the ground, after a certain degree of preparation, with water in which the skins of Truffles had been rubbed. At present, however, no progress has been made in the garden, nor do gardeners seem inclined to persevere in their attempts, though success would be sure to be highly remunerative.

As regards *Boletus edulis*, which is so highly esteemed in many parts of the Continent, the only attempts which have been made at cultivation are similar to those of Viscomte Noé, and these have been attended with success. In either case pains were taken to fence out the wild pigs, which are the most deadly enemies to both Truffle and Boletus.

The cultivation of the common Mushroom is carried on to a very great extent wherever scientific gardening is practised, but nowhere to a greater than at Paris, where the Catacombs present all the requisite conditions. Mushrooms are generally raised from artificial spawn, which is purchased of the seedsmen, and inserted in fragments amongst mould carefully prepared and placed either on the ground or on convenient shelves; and, where proper attention is paid to the requisite degree of temperature and moisture, care being taken to exceed neither, the cultivation is almost always successful and very profitable. Some of the best cultivators, however, as Mr. Ingram at Belvoir, make use of nothing more than

straw which has been thoroughly trodden underfoot in the stable or riding-school. When this is placed in a heap, it is soon penetrated in every direction with spawn, and may be used in several ways for the production of Mushrooms. Splendid crops may be obtained from it, from Asparagus-beds, from mould in spent Cucumber and Melon-frames, either covered with green turf or exposed, as well as from the ordinary Mushroom-shed.

It has been questioned whether Mushrooms might not be raised successfully on lawns, and there is no doubt that this sort of cultivation would succeed. But even supposing it should, it must more or less interfere with the nice keeping of the surface, a point of so much consequence to English gardeners, which would inevitably exhibit here and there dead patches, the effects of the last year's growth. And if *A. arvensis* (Plate 10, fig. 4) should be chosen, which would probably be more easy of cultivation in such situations than any other species, the extent of dead surface would be considerable. There is another very great objection to the cultivation of this species, which is that the spawn at times gives out a most oppressive smell. During the last summer I was astonished at the very powerful odour which arose from the large rings of *Agaricus arvensis*, creating at once a sense of nausea. This, indeed, was so annoying, that even the labourers, whose perceptions of such matters are not in general very delicate, observed it. This observation applies also to the Champignon (Plate 14, fig. 5), which is one of the most eligible in other respects for lawn cultivation. The spawn of *A. arvensis* penetrates to a great depth, and Mrs. Hussey* relates an instance where the scent was so overpowering,

* The reader should refer to the article Fairy Rings, in Mrs. Hussey's 'Illustrations of British Mycology,' appended to her account of *Agaricus Oreades*.

that it was with great difficulty that the labourers who had to dig out a quantity of the spawn which had become a nuisance, could accomplish their task.

An esculent species of Agaric is raised at Naples by simply depositing a quantity of coffee-grounds in a warm cellar. No spawn is used, but the Fungus seems very generally to make its appearance after a certain time. Like most species which grow in such habitats, it is probably a mere state of some common form. A Polyporus used for food is raised in Italy from hazel-stumps, by simply charring them partially, and then supplying them with a proper quantity of water. Another species, *P. tuberaster*, springs up in Italy from conglomerated masses of earth and spawn, known by the name of *Pietra Fungaja*, or Fungus-stone, when placed in the conservatory; and I have seen specimens raised in Lee's garden, at Hammer-smith, from imported spawn. Attempts have been made to cultivate a fine variety of Mushroom from spawn imported from the Swan River. It is to be hoped that this may be tried again, and that *Agaricus fabaceus*, an American species, may also have another trial. A few species of Fungi occasionally make their appearance in the soil or on wood imported with exotic plants. I have seen, for instance, *Schizophyllum commune* in great abundance, accompanied by a pretty white *Marasmius*. The lovely *Marasmius hæmatocephalus* lately made its appearance at Kew, in a pot with a species of *Carludovica*; the curious *Aseröe* came up in the same establishment on Australian mould, and other species might be noticed of which I have specimens in my herbarium, and amongst these *Hypoxyylon marginatum*, an American species, which was observed in the conservatory at Chatsworth. These, however, are mere accidents, but they tend to show that many species might ornament our stoves from imported spawn, if their introduction was desired.

As regards matters of science or curiosity, the reproductive bodies of many Fungi can be made to germinate very readily by placing them in fluid in an insulated cell, or by simply putting them upon a slip of glass under an air-tight bell-glass. In cases where they do not germinate, there is some fault in general either in the temperature or degree of moisture; or sometimes because mere water is not sufficient, without an admixture of sugar or some other organic matter. Many species of Mould may be raised very easily upon paste made with ground rice under a bell-glass, and some Fungi may be brought to perfection on rotten wood in the same condition. The well-known Ergot may be induced to produce its very curious perfect form (Plate 23, fig. 7), by simply sowing the infected grains in a garden-pot, and avoiding extremes of dryness or moisture.* Even some of the species which are parasites on living leaves may be propagated either by direct sowing of the spores on the young leaves, or watering the soil in which the plant proposed to bear the parasite grows, as in the case of the yellow Rose Rust, with water in which infected leaves have been duly steeped.

It may be stated, in conclusion of this Chapter, that *Polyporus ignarius* has been artificially raised in Germany, by merely collecting trunks impregnated with spawn, or likely to be so, and keeping them properly irrigated. Several crops have been obtained by this method in the course of the year.

* Mr. Currey has induced the Ergot of the common Reed to fructify by keeping the stem immersed in water.