

—Having thus given you, Sir, the Description of this surprizing Appearance, and that with the utmost regard to Truth, I beg Leave to subscribe myself,

S I R,

Mile-End, London,
Nov. 3. 1743.

Your most obedient,
Humble Servant,

Griffith Hughes.

See TAB. III. Fig. I.

VII. *A Letter from the Reverend Mr. Roger Pickering, V. D. M. to Cromwell Mortimer, M. D. Secr. R. S. concerning the Seeds of Mushrooms.*

S I R, Deptford, Oct. 31. 1743.

Read Nov.
10. 1743.

THE last time but one I had the Pleasure of your Company, I took the Liberty of mentioning some Conjectures of mine upon the Propagation of Mushrooms, together with some Observations, which I had already made. I was always of Opinion, that these Plants had their Seeds, as well as others; and attributed the not discovering it hitherto, to the Shortness of this Plant's Duration, and to its succulent and loose Contexture, whereby it is liable to immediate Putrefaction from the least Alteration of Weather. I could no otherwise account for the Method made use of by the *Italians*, who make Mushroom-beds in their Cellars, with a Mixture

ture of fine Mould, and the Parings of Mushrooms laid upon Dung; and that of our Gardeners, who water their Beds with Water, wherein such Parings are soaked; but by supposing, that their Success was owing to minute Seeds lodged and retained in such Parings, and washed off by such Infusions. So also, as to the Mouldiness of old Dung and Thatch, which the Gardeners are very fond of in making their Mushroom-beds, I apprehended, that this Mouldiness was not the nutritive Juice or Salt proper for the Production of this Plant, but the Mushroom itself in its early and inceptive State. The late warm Rains have enabled me to reduce my Conjectures to a Certainty. In short, Sir, I have not only discovered, that this Mouldiness is a Collection of little Mushrooms adhering to each other by minute Fibres, or, as the Gardeners in other Cases call them, Runners; but I have had the Happiness to discover and preserve the Seed of Mushrooms.

I had prepared for my Observations, by ordering the Gardener to make a Mushroom-bed, in a well-sheltered Place, after the usual manner; which was finished about Six Weeks ago, but has not yet worked; and had charged him to let me know, if any occasionally sprung up in any Part of the Ground. Accordingly, about *Wednesday*, last Week, he informed me, that a great Plenty had appeared above-ground, among the Asparagus, and on the Grass-walks, as indeed I expected, because on *Tuesday* in the Night there had fallen $\frac{1}{32}$ of a Cubic Inch of Rain, which, together with an unusual Height of the Thermometer, for the Season, made it the most suitable Weather for Mushrooms. I immediately chose out the most
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promising Plants, which I covered with Bell-glasses, where there were several together, and the single Plants with little Hand-glasses, which I had had made for the Preservation of Wall-fruit.

On *Friday* last, *Oct.* 28th, at Noon, I carefully gathered about a Dozen Mushrooms, of the esculent Kind, from under the Glasses; choosing such as gradually differed from each other in the Colour of their Gills, from a faint Peach-bloom Colour, to a deep Purple; flattering myself, that as I had hereby got the Mushroom, in its several States, secured by these Glasses from the Injury of the Weather, I should be able to discover the Seed.

With these I gathered several Mushrooms of another Kind, commonly known by the Name of *Cham-pignons*; which also I had secured under Glasses. With these I began, and soon found, what I suspected to be the Case, that the Gills, as they are called, are no other than *Capsulae*, or Pods for the Seed; for with one of the lower Magnifiers, and a fine Penknife, I could easily divide them from adhering to each other. This encouraged me to apply directly to the larger sort of Mushrooms; and accordingly I fixed upon one of a deep Flesh-colour, which I looked upon to be, by its Colour, in its Prime. I began with one of the Gills carefully separated from the Head, or Stool, without bruising; but could discover nothing in it like Seeds, except that, here-and-there, there were some globular dark Spots, appearing, through the Fifth Magnifier, about the Size of very small Pin-heads: But when I endeavoured, with a fine Brush, to wipe off any thing, to fix it upon a Talc, the lightest Touch reduced it to Water. Upon this, I had

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recourse to a thin, but tough Filament, which was situated upon the Stalk or Stem of the Mushroom, in an exact Distance from the Head of the Mushroom, and the Mark, which the Earth round about the Stem had made. Upon this Filament appeared a fine downy Substance of a lively Brown, resembling the Down upon a Moth's Wing, but much finer. I could brush off some of this upon white Paper, without reducing it to Water; but, not having the new Apparatus for opaque Objects, (which is the only one I am without) there was nothing that appeared bold or sharp enough for me to depend upon. I had then recourse to a fine Talc in a Slider, and brushed off some of this brown Dust upon it; and, after I had applied the Second Magnifier, I was gratified with the first Sight of the Seed of Mushrooms; for I then discovered a Multitude of round, regular, transparent Bodies, bearing the same Appearance as the *Farina* of Flowers. I then applied the highest Magnifier, through which they appeared very bold, of the Size of a moderate Pin's-head.

I have endeavoured to draw a Sketch of the Mushroom, &c. in its just Proportion.

T A B. III. Figure 2.

- a. *Is the Mushroom in which I discovered the Seed in its natural Size.*
- b. *The Filament upon which the Seed was discovered, being, as I apprehend, a wise Provision of Nature, to prevent the Wind's Power over such minute Bodies as the Seeds are; for, by being placed at an exact Distance between the
Head*

Head of the Mushroom, and the Ground, it secures the Seed before the Wind's Power can affect it, unless the Wind be high; and, by another easy Fall, enables it to lodge itself safely in the Ground.

- c. *The Part of the Stem under-ground, from which the Fibres shoot, upon which the little Mushrooms, marked d, grow, appearing at first but like a white Mouldiness.*

Figure 3.

- a. b. *Animalcules of the Maggot, or Fly-kind, found in the Head and Stems of Mushrooms in a decaying State.*

Figure 4.

The Seed of the Mushroom, as it appears through the First Magnifier.

I have already trespassed so much upon your Time, and indeed, as it happens, my own, that I shall leave several Observations upon this odd Plant, as to its Potatoe-like Propagation, and the *Animalcules* which inhabit it in its decaying State, to another Opportunity; and conclude myself, with real Esteem,

S I R,

*Your assured Friend,
and most humble Servant,*

R. Pickering.

P. S.

I had forgot to mention under the Article *b.* Fig. 2. that the thin Filament is that to which the Edges of the Head of the Mushroom adhere, while it is, what is commonly called, a Button, and from which it separates by expanding into a Flap.

P. S.

Since I wrote the above, I have met with *Sigr. Micheli's Nova Genera Plantarum*, wherein I find the Observations which I have made upon Mushrooms, though entered upon without any Hint or Direction from him, or any other Writer, pretty near the same with his. I think it therefore a Piece of Justice, due to him, and to the Reading and Judgment of Mr. *Watson*, candidly to allow the first Discovery of the Seeds of Mushrooms to that *Italian* Botanist. It fully satisfies my little Ambition to have had the Honour of shewing them the First to the ROYAL SOCIETY of *England*.

R. Pickering.

N. B. I thought proper to print the Reverend Mr. *Pickering's* Paper on the Seeds of Mushrooms, together with Mr. *Watson's* Remarks upon it; because *Sigr. Micheli's* Book, being printed at *Florence*, is not in many Peoples Hands here; and, as that is in *Latin*, I thought it would not be disagreeable to our Gardeners to have an Account of this Discovery in *English*: Besides, it is but doing Justice to Mr. *Pickering's* Diligence in searching into the Works of Nature, since he was so fortunate as to succeed in a Discovery which had eluded many curious Botanists, and that without having taken any Hint from *Micheli*.

C. M.

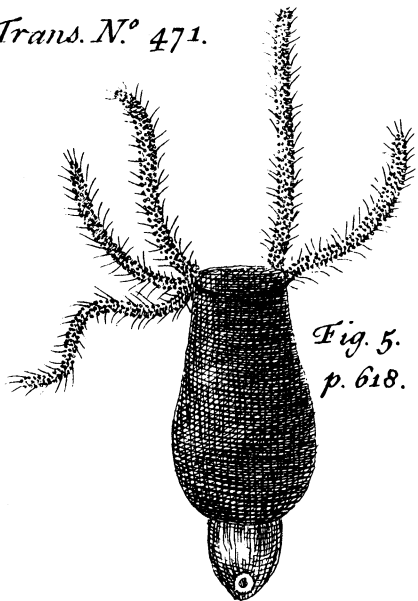


Fig. 5.
p. 618.

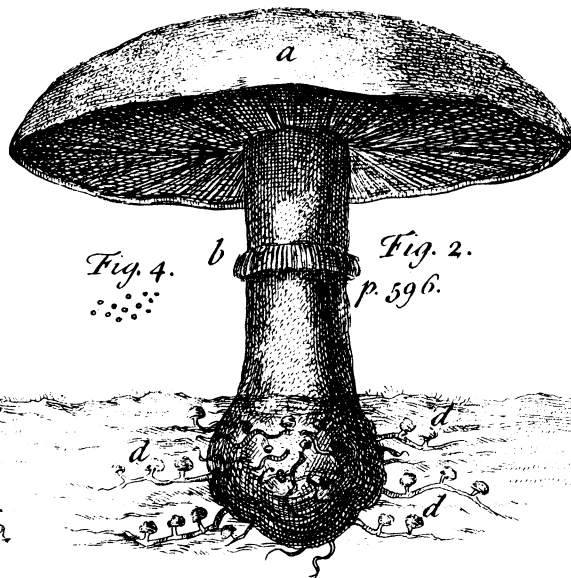


Fig. 2.
p. 596.

Fig. 3.
a
b



Fig. 1. p. 591.