
XXIII. *A New Method of preserving Fungi, &c. By William Withering, M. D. F. R. S. and F. L. S.*

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FROM a conviction that many of the difficulties attendant upon the study of the Agarics, and some other genera of Fungi, arose from the want of a method of preserving them in a state fit for comparison one with another, I attempted some years ago to accomplish this purpose, by immersing them in various chemical liquids, and after some trials found it possible to preserve their habit completely, and in some measure also their texture and colours. By the same methods I also found that Mosses and Lichens might be preserved in great perfection.

A continued attention to this subject gave rise to a great number of experiments; but I shall not trouble the Society with the detail of them, rather confining myself to a more particular description of the two methods which I have found most practicable and efficacious, and only cursorily mentioning some of those that have failed.

No. I.

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To half a pound of vitriol of copper, called blue vitriol, reduced to powder, add a pint of cold water: stir them together for a minute, and then throw away the water: upon the remaining vitriol pour half a pint of boiling water, and stir them frequently until the liquor be nearly cool. Set it by in a warm place, for two or three days, to crystallize.

Take any quantity of these crystals, add to them as much hot water as will barely dissolve them, and put the solution into a vial.

To two or three quarts of pure spring water, put as much of this solution of blue vitriol as will give to the whole a very slight bluish tinge: then add to it, rectified spirit of wine, in the proportion of a pint to a gallon: filter the liquor through blotting or cap paper, and put it into bottles for use.

No. II.

Dissolve a quarter of an ounce of sugar of lead in a pint of distilled or very pure spring water, made boiling hot; add seven pints of pure cold water, and one pint of rectified spirit of wine: filter the liquor, and keep it in bottles.

The above proportion of spirits of wine is sufficient for the thickest and most succulent specimens, but less will do for such as are thin and not juicy. If the spirit be sufficient to prevent mouldiness, it is enough, for more has a tendency to extract the colours.

Put

Put the specimens to be preserved into wide-mouthed jars made of flint glass, and well fitted with corks: fill the jars quite full with one or other of the above liquids, so as to leave in as little air as possible: cork the jars very close, covering the corks with tin foil, or thin sheet-lead, such as may be had from the dealers in tea, turning the edge of the lead or tin downwards so as to lap over and under the edge of the jar.

The dark-coloured plants are very apt to discolour the liquor, the milky ones to render it turbid, and some of the juicy ones to excite the vinous fermentation. In any of these cases the liquor must be repeatedly changed.

Agarics may be transported to almost any distance with little damage, by the following method. Put them into an earthen jar upon a layer of moss a little pressed down; cover them with more moss, carefully filling up the interstices; and thus go on stratifying them until the jar be quite full; pour in the liquid No. I. as long as the moss will continue to imbibe any; then stop the mouth of the jar securely. It may be useful to mention, that when several species are put into one jar, they may be labelled with slips of card paper, written upon with black lead pencil.

I have principally used the liquor No. I.; but No. II. is best adapted to preserve some of the more tender colours, and it also keeps the texture more firm. Let the botanist however be careful not to mix the liquors, nor to change one for the other after a plant has once been wetted with one of them.

Amongst the less successful attempts, I shall just mention that acids, even those of mineral origin, are apt to produce mouldiness; that neutral salts soften and destroy the texture of the plants; though perhaps a weak solution of common salt, with a

sufficient quantity of spirit of wine, might be used advantageously for the preservation of Fuci and other marine vegetables.

Earthy salts seem useless, except alum, which preserves them tolerably well for a time, but at length they are apt to become mouldy. Spirit of wine, either by itself or diluted with water, is an excellent preserver of the texture, but destroys the colour of the plants.

No doubt but future experiments will discover methods preferable to those now mentioned, and that we may at length hope to see the cabinet of the naturalist adorned with one of the most varied tribes of the vegetable creation.