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A Rapid Softening Agent for Dried Plant Structures¹

By RICHARD W. POHL

In the past, dried plant materials, such as fragments of herbarium specimens, have generally been softened for dissection by boiling in water. Such a process has obvious disadvantages: slowness, fire hazard, and inconvenience. Furthermore, it is impossible to apply the boiling technique to mounted herbarium specimens without removing portions of the plant.

While the author was engaged in the examination of the ligules of large numbers of grass specimens, it became evident that a solution which could be applied directly to the mounted specimen to soften it *in situ* would be of great advantage in preventing unnecessary breakage. A little experimentation led to the formulation of the solution whose composition is stated below. It proved very satisfactory for softening most plant specimens quickly, without boiling.

The solution is clear and colorless, free from objectionable odor, and does not attack skin or clothing, nor stain herbarium paper. In use, it may be applied with a dropper to plant parts on herbarium sheets to soften them for bending, or even to facilitate removal of specimens which have been glued to the sheet. It is absorbed very rapidly. Any excess solution may be blotted away. Small detached structures may be soaked in the fluid for a few minutes, whereupon they are readily dissected. After examination, the material may be blotted dry and retained for further use. Specimens so softened do not become objectionably flaccid as boiled ones do. A previous solution, mentioned by Benson (1939), has the disadvantage of containing glycerine, which tends to stain paper and might promote the growth of fungi. In addition, Benson's solution has a higher surface tension (approximately 44 dynes/cm), in contrast to the present solution, which has an approximate surface tension of 31 dynes/cm.

This solution has also proved very useful in the preparation of liquid mounts of fungi which have spores or other structures which resist wetting or tend to entrap bubbles. Such liquid mounts

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have proven excellent for photomicrography of *Penicillia*, *Aspergilli*, and smuts. Hard, woody fungi, such as *Valsa* and *Xylaria* also may be softened prior to sectioning by soaking in the solution. This information has been given me by Dr. J. C. Gilman and Dr. Lois Tiffany, who have used this method for several years.

The solution is composed as follows:

Diocetyl Sodium Sulfosuccinate ²	1%
Distilled water	74%
Methyl Alcohol	25%

Literature Cited

Benson, Lyman. 1939. Notes on taxonomic techniques. *Torreyia* 39: 73-75.

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²Sold commercially as "Aerosol OT"