

## An Interesting Preservation of Color in the Algae and Certain Fungi

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Every teacher of botany is interested in preserving the natural color of plants that must be used as specimen materials when living specimens are not available.

Several years ago I showed that certain colors of fungi may be preserved by using pure glycerine as a preserving fluid. Species of red algae and red and green *Discomycetes* have retained their natural colors for months and even years. The best results with this solution were obtained with *Peziza* spp., *Plectania occidentalis*, *Sarcosypha floccosa*, and *Leotia chlorocephala*.

Recent experiments have shown that weak solutions of formaldehyde and paraformaldehyde may be used to better advantage because of lower cost and because they do not have the clearing effect of glycerine.

Living sea algae removed from the sea water and placed in a two and one-half per cent solution of formaldehyde will retain their natural colors, green, brown, and red for varying periods of time. All will remain brilliantly colored for days and even weeks. *Agardhiella* sp., *Ceramium* sp., *Polysiphonia* sp., *Lophosiphonia* sp., *Ulva*, *Monostroma*, and *Fucus* have kept their colors in such solution for more than a year. Several fungi have been tried but not with marked success.

A five per cent solution of paraformaldehyde promises to be an even better preserving medium for the above mentioned forms, and even the fresh-water green algae have retained their natural green color for several weeks in this solution. *Spirogyra* sp., *Cosmarium* spp., *Oedogonium* sp., and *Hydrodictyon* sp. have all been treated with this solution. Examination shows practically no plasymolysis of the cells of these green fresh-water forms.

Bright sunlight causes certain forms to gradually lose their color, however, if they are not allowed to remain in bright sunlight they retain their natural colors for weeks and months.

Experiments with the leaves and flowers of the higher plants have so far not been successful except for short periods of time. Further experiments are now being made with all of these plants.

It is hoped that this report will interest other botanists and that they will try various concentrations of the paraformaldehyde with various species of all groups of plants.

The paraformaldehyde (C. P.) may be obtained as a white powder and dissolved in distilled water at room temperature. It is very slowly soluble and requires frequent shaking.