

A METHOD OF OBTAINING A PLANE SURFACE ON CHARCOAL

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Photographing charcoal specimens distinctly is of primary importance to the dendrochronologist since the majority of material available for dating is charcoal.

A fractured surface is perfectly workable for dating, but will not ordinarily photograph well unless a long focus lens is used. ⁽¹⁾ In the case of pinyon records that are highly compressed it is necessary to use a short focus lens in order to obtain higher magnifications. Photographing specimens magnified from five to twenty-five times requires a perfectly plane surface, and, at the same time, preservation of cell structure. The writer has found the following method satisfactory in obtaining a legible razor-cut surface.

1. Cut an absolutely plane surface with a **sharp** razor, or, grind a surface with the side of a grindstone, (a 45 degree cut is preferable).

2. Boil the specimen in paraffin long enough to assure thorough penetration into all cells, 30 minutes is usually sufficient. Do **not** use a gasoline solution.

3. Allow specimen to cool completely so that paraffin will become solid. This requires two to six hours, and will then support the cell walls when they are cut.

4. Cut a new surface with the sharpest blade available. Very little shaving is required to clear the old surface of pulverized material which has filled the interstices of the cells. This surface is highly reflective and cannot be photographed at this stage of preparation.

5. Subject the surface to heat sufficiently intense to expel paraffin. Hold the surface next to a hot-plate, turned up on its side, to allow the melted paraffin to drip away. This process must be repeated once or twice since paraffin keeps working out from inside the specimen and clouding the surface.

When all the paraffin has been expelled from the cells the resulting surface is very similar to that of wood prepared with a razor. If great care is not exercised in the final shaving of the surface and in expelling paraffin, the whole process will have to be repeated.

In photographing, do not subject the specimen to too great heat from the lights as the surface will have a tendency to cloud after several minutes, and will only clear on cooling.

This method may also be used on rotten wood if the following procedure is followed:

Char the wood by heating it in an air-tight container, a coffee can will serve. It is well to dry the specimen thoroughly beforehand, and to char it very slowly since the drying undergone in this process induces shrinkage which, if too great, causes excessive fracture. If the specimen is already cracked it is likely to fracture during the process. After the specimen has become charcoal it may be handled in the same way as any charcoal. Almost any rotted specimen may be treated in this manner, which permits surfacing by fracture or cutting, providing that the rotting has not gone so far as to destroy the cell structure in the specimen.

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⁽¹⁾ Photograph Of A Charcoal Specimen. H. F. Davis, Tree-Ring Bulletin, Vol. II,