

Days or weeks later, as the water still remaining in the wood slowly dries out, the specimen should be re-immersed in the solution, the soaking varying as experiment proves necessary.

When the specimen is to be studied, the heavy paraffined cheesecloth wrapping is cut from one end but left covering the rest of the surface for protection. If the wood is still damp it should be left to dry for two or three days, after which the surface may be carefully cut with a razor blade.

Our photographer, Mr. Eisendrath, experimented with hardening this surface with bakelite dissolved in acetone. The solution, scarcely thicker than water, is poured onto the surface, into which it quickly sinks, especially if the wood is well compressed horizontally by tight wrappings or by rubber bands over the wrappings. After two or three applications of the bakelite the wood is set aside to dry for several hours. The bakelite penetrates one half inch or more without difficulty, provides such body to the wood that it can be cut as cleanly as fresh wood, and holds a surface that may be photographed. Heating the bakelite to crystalize it impairs the surface for cutting and for observation. Experiments with other substances that might be used on wet wood in the field are being made, but the combination of firm wrapping, adequate field preparation in warm gasoline saturated with paraffin, and laboratory preparation with bakelite in acetone has proved so successful that we do not hesitate to recommend it to others working with wet or with dry charcoal.

SOUTHWESTERN DATED RUINS: IV

Chaco Canyon, New Mexico

By FLORENCE HAWLEY SENTER

Site	Period	Type of Masonry	No. of Specimens	Range of Dates
Chetro Ketl*	Pueblo III	Inferior wide banded with core	33	931-1102
		Narrow banded with core	81	925-1066
		Spalled blocks with core	11	1060-1116
		Fine unbanded with core and spalled blocks with core	19	911-1103
Talus Rock Shelter	Pueblo III		2	1101
East Dump of Chetro Ketl	Pueblo III	Stratum 4 (1)	10	921-1054
		Stratum 3	44	929-1119 (2)
		Stratum 2	1	1090 (2)
		Talus Site I of Chetro Ketl	Pueblo III	Narrow banded with core
Hungo Pavi*	Pueblo III	Inferior wide banded with core	2	1066-1076
		Fine wide banded with core	5	1048-1064
		Spalled blocks with core	1	1004
Kinklizin	Pueblo III	Spalled blocks with core	1	1084
Kinya-a	Pueblo III	Spalled blocks with core	6	1097-1106
Kinbiniola*	Pueblo II	Spalled blocks with core	2	1119-1124
		Unfaced slab	4	941- 943
Penasco Blanco*	Pueblo III	Unfaced slab	7	898-1055
		Fine wide banded with core	6	1051-1062
		?	1	996
Pueblo Pintado	Pueblo III	Fine wide banded with core	2	1060
Tsinklitzin	Pueblo III	Spalled blocks with core	2	1111
Una Vida	Pueblo III	Spalled blocks with core	1	987
		Fine wide banded with core	1	1048
		Unfaced slab	6	847- 950
		Fine wide banded with core	1	1027
Wijiji	Pueblo III		1	1027
Leyit Kin	Pueblo III		18	1011-1045

Tseh Tso	Pueblo II	Small spalled blocks without core	1	922
Kinchindi (3)	Pueblo III		2	1019-1042
Mound No. 20(4)	Pueblo III		4	1039-1045
Kinishba (Ft. Apache)	Pueblo IV	Spalled blocks with core (?)	3	1307

* See also other installments of this series.

- (1) See Hawley, F. M., 1934, "The Significance of the Dated Prehistory of Chetro Keti", Univ. of New Mex., Mon. Series, Vol. 1, No. 1, for explanation of peculiar range of dates and strata composition.
- (2) Corrected for burned-off exteriors.
- (3) Also known as Small House Unit No. 26 (according to Fisher's Chaco Survey).
- (4) Also known as Mound No. 21 (according to Fisher's Chaco Survey), and as Mound No. 27 (according to Wilson's Survey).

ON PHOTOGRAPHING THE RINGS OF OAK SPECIMENS

By DAVID B. EISENDRATH, JR.

In photographing the rings of oak specimens, it was found in many cases, particularly where small rings were encountered, that color differentiation between spring and summer wood was so slight as to make distinct photographic record difficult or impossible.

The investigator tried both daylight and Mazda (artificial) illumination with a great many film and filter combinations in an attempt to obtain contrast and sharply defined edges in ring patterns, but with little success. Although photography with infra-red materials and techniques gave somewhat better results, the method was uncertain, and expensive. An attempt was then made to photograph with light from the blue end of the spectrum, and also with invisible ultra-violet rays. It was found that kerosene, used in ring counting, fluoresced slightly, giving a dull glow to the specimen under ultra-violet light; since Pennsylvania oils fluoresce more brightly than other oils, Pennsylvania kerosene with a few drops of motor oil added was used, and produced even better fluorescence. Photographs of these specimens were surprisingly easy to study and were well defined, indicating further research into the field.

Since photography by ultra-violet light is impossible with ordinary cameras and (glass) lenses, a study was made of materials which, under ultra-violet light, would fluoresce visibly, and thus could be photographed more easily. Although several such materials were tried, best results were obtained by the following method:

A small amount of refined Anthracene (powdered), C_6H_4 : (CH) 2: C_6H_4 , is dissolved in a few c.c.'s of ether, in which it is slightly soluble, and after the ether has almost completely evaporated, an equal amount of alcohol is added. This material is mixed thoroughly by shaking in a test-tube, until a thinnish paste remains. This paste is then rubbed over and into the surface of the cut specimen with a piece of cotton; it must be rubbed vigorously and carefully in order to make the rings absorb it uniformly. After the entire section has been treated in this manner, it is allowed to dry, forming a white surface over the cut edge. After drying, the cut edge is then rubbed gently with a piece of cotton soaked in alcohol in order to remove the surplus surface crystals.

It will be found that under sunlight, or the light from a white-flame arc light, the section will glow brightly because of the ultra-violet light in the source striking the crystals of anthracene which have been absorbed by the cells of the rings. It has been found that better crystals will form if the surface of the specimen is dry before this solution is applied.

In order to photograph the wood treated in this manner, it is neces-