AGE OF FORESTDALE RUIN EXCAVATED IN 1939

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A part of the Forestdale ruins near Showlow, Arizona, was excavated in 1939 by an expedition under the direction of Dr. E. W. Haury of the University of Arizona, a work sponsored by the American Philosophical Society and the Arizona State Museum. Dr. Haury and his associates assigned a date in the late 600's to the charcoal found there. In view of forthcoming publication he asked the writer to review this dating. As the latter had only seen two or three specimens from that site, a detailed study of them was made. Forty-two specimens from eighteen different trees were carefully examined. They are all charcoal of western yellow pine and the common pinyon. In 1939 two or three of them had been examined; they were roundish pieces, the largest being about four inches in diameter; the rings were generally rather thin and there were many doubles. This latter character is strongly sustained by modern trees in that vicinity.

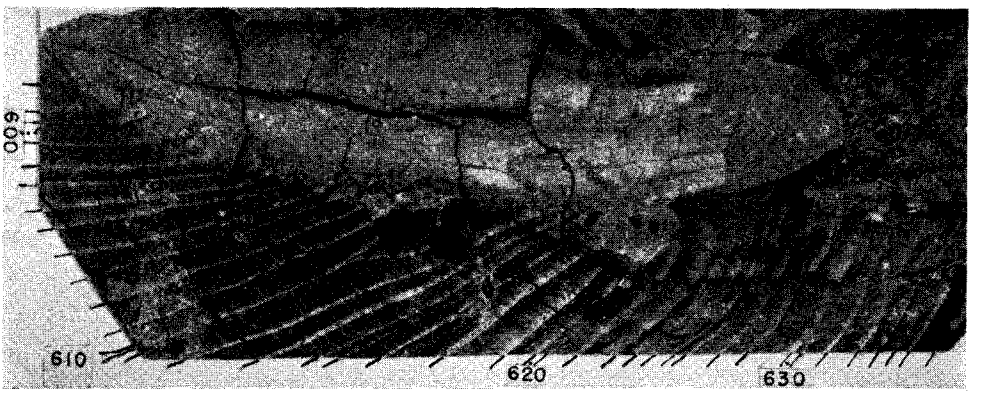
Some time previous to the recent examination they had been sectioned to a thickness of one-half inch to one inch which left them very fragile and many were broken. Sectioning a charcoal piece is a serious matter for the archeologist and in the writer's opinion should never be done unless the piece is so large that it is difficult to handle. In a long experience we have found large numbers of cases in which a small fragment that contained the outermost rings has become detached. To the student of prehistory any loss of these rings is unfortunate because it is the late rings on the piece that date the ruin. So the unnecessary loss of any part of a charcoal piece endangers the value of the piece and may destroy it altogether. Only a minimum of surface cutting or chipping or sometimes breakage along cracks is justified. Some of this is necessary for the identification of the rings.

The surfaces which the returned pieces presented had been deeply abraded in a manner that raised the tougher rings into great prominence and largely obliterated the fainter rings and made it impossible to see the cellular structure by which the false or annual character of rings is judged. Hence every piece had to be chipped to reveal the ring structure.

Immediately on examination crossdating became evident with a good display of the JCD signature (611-620 A. D.). Based on that and on many other satisfactory patterns, dates were assigned, and times of beginning and ending of each specimen's ring-sequence were recorded after carefully identifying doubles as such; in difficult cases powers up to X-100 were used and the shape of the cells and changes of shape on the outer edge of each possible ring were noted.*

This crossdating was carried through 18 specimens from six different trees and seemed to the writer to establish their identity by excellent similarity to the well known chronological sequences in the 600's. The Forestdale ring series begins about A. D. 574 and extends to an approximate date A. D. 720±10; 587-8 form a coarse pair, 590-1 form a closer pair, 599 is small as usual; 603 is apt to be small as usual but 605 is mostly smaller than usual; 610 is a large double, 611 is very small and sometimes microscopic and rarely absent. Rings are apt to be complacent out to 628 at which point to 634 they are small with 628 and 630 smaller than the rest; 636 is very large, as is usual; 639-40 are small, as usual; 645-6-7 have one absent ring probably 646

* Usually in pines of the Southwest a small red (latewood) ring with hazy outer edge frequently located just inside a heavier latewood ring, is a "double," that is, non-annual; if it is just outside a heavier latewood ring and has a sharp outside edge like the obvious annuals, and does not end somewhere in mid-air, in some cases merging into the preceding annual ring, it is itself almost always an annual.



FSTD-36 (Haury, 1939) Forestdale charcoal showing ring sequences from A. D. 598 to 636.

and the two that show are small and faint. The signature at 660-4 appears in half a dozen pieces. In rings of normal size, 660 is very small and 661, 662, 663, and 664 are nearly equal. In minimized rings where absences are apt to occur this group shows one absence at 660; 663 is slightly smaller than the others. From here outward the rings are smaller, with successful checks at 677-8, 686, 690 and a count to about 713 in micro-rings. It was inferred long ago that allowance must be made for outside losses in the Forestdale specimens and that the actual cutting dates could be in the early 700's. The single piece, Haury's 70B of 1939, that showed rings later than 700, had strongly marked diminishing ring-size near the outside and probably had very little loss there; hence the outside date already given, 720 ± 10 is considered fairly near. These results support the previous dating of the Forestdale pieces. A photograph is shown of the JCD signature, 611-620, and the adjacent ring patterns from A. D. 598 to 636, in specimen EWH-36, 1939. These dates give the first and last complete rings. Ring 610 is suppressed to microscopic size in part of its course. For further study of the rings of this period reference is made to Southwestern Photographic Ring Sequences, American Documentation Institute, Science Service: Document 1298, Washington, D. C., 1939.