

HH-39: RECOLLECTIONS OF A DRAMATIC MOMENT IN SOUTHWESTERN ARCHAEOLOGY*

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The chronicle of A. E. Douglass' experiences in developing his world-renowned studies into the growth behavior of trees is laden with the insight of a scientist, hard work, frustrations, heartwarming episodes and high drama. Although the complete story of his experiences has not been written and the full impact of his contributions to archaeology has not yet been assessed, one event, which stands out above all the rest, bears recounting on this occasion.

Let us turn time back, as Douglass so successfully did on a grand scale, to the late 1920's. Judd was putting the finishing touches on Pueblo Bonito; Morris was making his uniquely effective contributions to our knowledge of the Basketmakers by urging his battered little truck into the canyons of the Red Rock country; Colton and Gladwin were launching the Museum of Northern Arizona and Gila Pueblo respectively. And there were others, too numerous to mention. It was a time of great activity, spurred in part by the first codification of the knowledge of the Southwest by the Pecos Conference in 1927. Lacking at that time was any acceptable basis for pinning age labels on the periods of culture development, Basketmaker I to III and Pueblo I to IV, which grew out of the Pecos Conference discussions. Only Pueblo V was securely anchored in the historical present. But, for earlier periods, even the best informed estimates varied widely. One heard reference to the Basketmakers at 2000 B.C. without provoking an argumentative ripple. Where did the great population centers of Chaco Canyon, Mesa Verde, of the Tsegi, and countless other well-known ruins fit into the Christian calendar? The uncertainty bore down on everyone's thinking, for descriptions of ruins, studies of pots and pans, and efforts to recreate ancient history were sterile without a valid sense of time. All eyes, some skeptical, were turned on the astronomer Douglass; his mind and hands were developing a method that might yield the key to unlock this chronological impasse.

By 1929 Douglass reached the break-through point in his studies. Had this been achieved a decade or two earlier, he would certainly have experienced agonizing delays for the necessary advances in archaeological knowledge had not been made and the mood of the archaeologists was not then ready for him. But, by happy coincidence in the accident of history, the man's idea and the technique were introduced to the discipline about to be vastly enriched at the right moment in its progress.

The Third National Geographic Society Beam Expedition was set into operation in 1929. Its program, arising out of the experiences of the First and Second Beam Expeditions, was to make an all-out attack on the problem of uniting two separate chronologies resulting from Douglass' work up to that moment. The first segment was the chronology beginning with the records in the then-growing trees and extending back in time to about A.D. 1260. To achieve this, Douglass had made use of the timbers from Old Oraibi and even charcoal dug from the ruins of Kawaiku. The second segment of the chronology he called the Relative Dating Series. It was developed from the ring records of wood provided him by the archaeologists, beams from Aztec, Pueblo Bonito, Cliff Palace, Betatakin and others. This series was 585 years in length. It was clear that if this sequence of rings could be joined to the ring record of known age, the time of occupancy of

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these ruins would immediately become known. Bridging the gap, therefore, became the prime preoccupation, and it was this task to which the Third Beam Expedition was directed.

At this point, knowledge of regional archaeology became important, and the predictive aspect of science had to be called upon. It was known that in northern Arizona, color gradations in the evolution of pottery ranged from red, then orange to yellow. The wood providing the ring record in the oldest part of the historic sequence came from a time when yellow pottery was produced. The youngest logs of the Relative Dating sequence came from ruins that produced red pottery. The answer seemed clear: locate ruins with a predominance of orange pottery, for in them there might be found the architectural wood whose rings would bind the two sequences together.

There was also the factor of geographical location, for the right kinds of trees had to be available to the ancient builders. This presented something of a dilemma. Ruins with the strongest accent of orange-hued pottery were farthest from presumed timber sources, and ruins in the most favorable environments produced a predominance of red pottery, albeit of a different kind than the red pottery of earlier times.

Colton, Judd, and Hargrave worked closely with Douglass in selecting the most promising sites. Four were eventually decided upon: the Whipple Ruin at Showlow, the Pinedale Ruin 15 miles to the west, Kintiel and Kokopnyama more than 100 miles to the north. Hargrave and Haury were signed on to guide the field operations. The party first moved to Showlow in mid-June, 1929, and took up residence in the local hostelry, a converted two-story red brick home. Telephone service was uncertain at best and electric lights were not yet contributing to the luxury of local living. The advantage was that the hotel was just across the street from the ruin.

I cannot say that our first glimpse of the ruin filled us with a sense of destiny. The location of the site on the highest ground adjacent to the flat Showlow valley had made it attractive for homesites for the people who settled there just before the turn of the century. Three houses and sundry barns, sheds, and outhouses occupied flattened parts of the site and many of the original building stones had been put to modern use. Furthermore, much of the ruin had been turned over by one of the owners in search of pottery. It seemed a dismal prospect to do worthwhile archaeology here.

By Tuesday, June 18, a small crew of laborers had been enlisted and the first ground was broken. We had to remember that this was a charcoal-hunting junket and no matter how interesting the test, if no "black gold" appeared, it had to be abandoned in favor of another.

For several days diary entries reveal a tone of discouragement by such notations as "nothing out of the ordinary today." To spur the laborers to maximum effort a bonus of \$5 was offered to the man finding a specimen with a hundred rings or more.

Hargrave and I had devised a code system for numbering the specimens found, employing the beginning letter of our surnames, followed by a serial number, which recorded the order of discovery. The register shows HH-1 as a miscellaneous collection of 13 charcoal scraps recovered in a clean-up operation of previous testing. Most of these were no larger than a walnut, and the cataloguing of them was a sign of sheer desperation, although we would not view the keeping of small pieces in such a way today.

A stone-wall property line cut off the major part of the ruin from a small appendage at the far north end. Just what prompted digging in this inconspicuous part of the village beyond the wall I do not recall, but let's attribute it to the desire to sample broadly. Close to the surface a laborer's shovel brought up black, the color to which our eyes were now geared. But how could anything so shallowly buried serve our ends? Could it be a piece

of recent wood, the residue of modern occupation? Further digging soon showed it to be the surface-charred end of an ancient roof timber, the heart wood unaffected by the heat long since turned to dust. But, happily, the preserving effects of the charring extended from near the center of the log to near its outer surface. It was by all odds the largest piece of charcoal yet found. This was Saturday morning, June 22. My notes of the discovery are a model of brevity and incompleteness—"Reed Whipple opened up Test 11, Room 4 this morning and shortly exposed a good-sized timber near the surface. Douglass and Judd arrived from Flagstaff just in time to take pictures of it *in situ* and to help take it out." Then follows the understatement of the decade: "This piece proved to be very valuable; the center ring dated 1237." The latter was obviously an afterthought but written before the full significance of the log was realized.

Douglass and Judd could not have arrived at a more opportune moment. The specimen was exceptionally fragile and its removal would require the combined skills of all hands present. Finally, carefully wrapped and treated, the log was tagged. The number was HH-39.

Douglass immediately retired to a nearby shed, commandeered as a laboratory, and proceeded to do a quick field analysis. Characteristic ring patterns of the 13th and 14th centuries in the historically anchored sequence were quickly identified, and by counting back in time the innermost ring proved to be the year 1237. The range of the historic chronology was thus extended by more than two decades. This, at least, was in the direction of the gap and Douglass made no effort to conceal his enthusiasm. He continued the examination throughout the afternoon, completely engrossed in his work, intent upon extracting the last bit of information from the carbonized fragments of the beam.

At the dinner table that evening, the conversation suffered long lapses of silence, Douglass turning over in his mind the findings of the day, the rest of us waiting for any pronouncement he might be ready to make.

We moved into the living room for a further review of the problem. Douglass seated himself near the center of the room at a small square table which provided barely sufficient space for a few charcoal fragments, his skeleton plots, and hand lens. Judd, Hargrave, and I arranged ourselves around the room, expectant, but choosing not to talk. Yet one question was uppermost in everyone's mind. Could the extension of the historic chronology by 23 years possibly close the gap? Judd finally broke the silence by the observation: "Maybe the gap is not very big." We felt certain that this thought had been in Douglass' mind most of the day, for he had with him the plots of the prehistoric sequence and was, in fact, already testing a possible overlap. We waited, listened to the uncertain hissing of the gasoline lamp that supplied the only light, watched his every move, and noted with concealed amusement the ever-enlarging smudge of charcoal on his nose as he repeatedly cross-checked the specimen against his paper records.

Finally, the answer came; and here I must quote from memory. If the words are not exact, the meaning is: "I think we have it. Ring patterns between 1240 and 1300 of the historic sequence correspond in all important respects to the patterns in the youngest part of the prehistoric sequence. This means that there was no gap at all. The overlap of the two chronologies was only 26 years and there was no possible way to join the two on the evidence we had. Beam HH-39 has established the bridge." This was a moment of great truth, and at a time like this, the truth sinks in slowly. No one spoke. Douglass was busy making mental calculations, correcting his relative dates for ruins to the years of the Christian calendar. He broke the silence in his gentle way and told the spellbound archaeologists: "This means that Pueblo Bonito was occupied in the 11th and early 12th centuries and the other large ruins of Chaco Canyon were of the same age. The ruins

of Mesa Verde, Betatakin and Keet Seel are a little younger, mid-13th century." He continued his recitation, revealing his phenomenal memory, by listing all the major sites from which he obtained wood for developing the prehistoric sequence, and delivering at the same time, a totally new and vital short course in Southwestern prehistory.

For the three of us, the experience was unforgettable. To be present at the instant of the celebrated break-through in science that set the chronological house in order for the Southwestern United States was reward enough. But beyond that, was the privilege to work for a time at the side of Douglass, the scholar, the astronomer turned archaeologist.

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