Obsidian Hydration and 14C Dating at Copán, Honduras: Three Concordance Experiments

Research Year: 1996
Culture: Maya
Chronology: Late Classic
Location: Honduras
Site: Copán

A large array of obsidian hydration dates produced by Penn State University projects for over 200 sites has been used to reconstruct settlement history at Copán, Honduras. The array indicates a substantial occupation of the valley long after the dynastic collapse and protracted use of Coner complex ceramic forms, and has consequently been regarded as controversial by some archaeologists. FAMSI funded 12 concordance experiments that evaluated hydration dates (n=123) against AMS ^{14}C dates (n=17), and also acted as a blind-test referee. In 11 experiments one or more ^{14}C dates from burials was tested against the hydration-derived occupation span for a specific site. Two ^{14}C dates were judged to be contextually non-relevant. Thirteen of the fourteen residual dates were in agreement with their associated occupational spans. The twelfth experiment sought to correlate two possibly contemporaneous events at an elite Copán site. There was no agreement between the two methods, indicating either that the events were not contemporary or that one dating method produced inaccurate results. In this experiment the hydration dates are a better contextual match for the event than the ^{14}C date.

The experiments constitute the most rigorous concordance test between the two dating methods ever carried out in Mesoamerica. Results indicate high levels of agreement, thus supporting the culture-historical implications of the larger hydration array. No skewing of results due to differences in elevation or other microenvironmental factors was detected.

The radiocarbon dates by themselves indicate late occupation of the valley and late use of Coner or Coner-like ceramics. One burial was made in a rural site as late as the 14th century A.D.

For more information, refer to: *Ancient Mesoamerica*, Volume 3, No. 1, Spring 1992, pp. 117-134, 185-197.

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