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FLUORIDE DATING OF BURIALS FROM THE ANGEL SITE: A FINAL REPORT

The fluoride contents of prehistoric bones can be used to determine the relative ages of the specimens with ease when fluoride content is measured using an ion selective electrode. Measurements of fluoride contents of ribs from prehistoric burials from the Angel Site (12 Vg 1), a large prehistoric village and ceremonial center in southwestern Indiana, demonstrate that fluoride dating can be used to determine the occupational chronology of a prehistoric site where other methods of dating are inapplicable.

The applicability of this method for developing shortterm chronologies was tested by determining the fluoride contents of ribs from five pairs of adult burials of known chronological relationships within each pair (according to their archaeological contexts). The fluoride contents of all the specimens behave as expected: earlier specimens have significantly higher fluoride contents than later ones, and contemporary specimens show no significant difference in fluoride content ([Figure 9](#)). These correspondences between fluoride content and relative age for burials from contexts of known relative age show that fluoride measurements are an excellent tool for the relative chronological ranking of the Angel burials.

The fluoride contents of 38 additional burials were determined in order to provide new information about the chronology of prehistoric mortuary behavior at the site. Different areas of the site were probably used as cemeteries and were contemporary with the "village occupation," because there is no significant difference between the fluoride contents of the burials analyzed from the "village occupation" and the fluoride contents of burials analyzed from Subdivisions 013D, R12A, S11D, and U12A.

A lack of significant differences in fluoride contents between groups of burials that postdate various structural features in the "village occupations suggests that these burials were interred in the village area after the structures and other features were no longer in use. All appear to postdate house wall or other trenches and all the stockades (the curtain wall and both the inner and outer stockades). Burials analyzed from the "village occupation" that could not be chronologically related to other archaeological features were probably interred at the same time as burials which could be related to features, since none of these have fluoride contents greater than that of Burial 26/ XIIC, which postdated a wall trench that predated Feature 46/XIIC.

Fluoride dating of burials from the Angel Site suggests that the burials represent a single continuous episode of mortuary activity which occurred relatively late in the occupation of the site.