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A Study of Cultural Modifications and Taphonomic Alterations on Prehistoric Human Skeletal Remains from Crystal Onyx Cave (15Bn20), Barren County, Kentucky Using the Large Chamber Scanning Electron Microscope JULIE SCOTT, DARLENE APPLEGATE, EDWARD KINTZEL, Western Kentucky University — Crystal Onyx Cave is a pit cave on Prewitts Knob in Barren County that was used prehistorically (ca. 1100-800 BC) as an ossuary. Archaeologists collected human bones from the cave in the 1980s, and since 1999 faculty and students at Western Kentucky University have been analyzing the remains. Over 2,800 highly fragmented bone specimens represent over thirty commingled male and female adults and subadults. This research focused on analysis of cut marks and elemental deposits on over 100 bone specimens using the Large Chamber Scanning Electron Microscope (LC-SEM) at WKU. Nondestructive testing of the remains was made possible using the variable pressure mode with back-scattered electrons for topographical analysis and use of energy dispersive spectroscopy for elemental analysis. The results confirm the practice of mortuary treatment involving defleshing and disarticulation at the Early Woodland site, as well as post-depositional accumulation of manganese in the cave environment.

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