PECULIAR OCCURRENCE OF THE CRETACEOUS TURTLE ADOCUS AT THE CHRONISTER SITE, BOLLINGER CO., MISSOURI

FORIR, Matthew, Geology Dept., St. Louis Community College at Florissant Valley, 3400 Pershall Road, St. Louis, Missouri 6313-1499;
STINCHCOMB, Bruce L., 18 Patricia, Ferguson, Missouri 63135

Fossiliferous late Cretaceous clays of the Chronister site, Bollinger Co. Missouri have produced numerous fragmentary specimens of the turtle genus Adocus sp. The turtle yielding horizon consists of non-marine, blue-grey clay which is locally weathered to a tan color. Occurrence of these clays in the southeastern part of the Ozark region of Missouri is attributed to the clays being deposited in local paleokarst/fault complexes.

In parts of the Chronister site highly fragmented turtles have been found in abundance and occur in an almost stacked sequence within the clays. This abundance and occurrence suggests some mechanism of concentration of the turtle shells. These grey plastic clays with their turtle concentrations are entirely different from adjacent Ozark residual clays which are reddish or tan in color and contain an abundance of residual chert. These residual clays contain cherts of lower Paleozoic strata, particularly cherts of the Jefferson City and Cotter formations. Exotic boulders of limestone embedded in the Cretaceous clays, on the other hand, come from younger strata such as the Plattin Limestone which presently does not occur in other than the local paleokarst/fault area complexes. These boulders of limestone may have been derived from Paleozoic outcrops at the upthrown side of a fault which during the Cretaceous Period formed a high bluff. During the Cretaceous, when the bone bearing clays were being deposited in the adjacent graben, this high bluff on the upthrown side of the fault contributed the exotic boulders now embedded in the clay. This once existant bluff, presently expressed as a medium steep hillside, has seen erosion and solution remove the bluff and its carbonate rocks leaving a hillside composed of residual clay and chert. The fossiliferous clays, with their included turtles, deposited on the downthrown side of the fault at the foot of the bluff and were preserved to make the Chronister site.

An interesting analogy to the Chronister site and its concentration of turtles is made with tortoise shell concentrations in the talus at the base of high bluffs of Ozark rivers. High (60 meter) bluffs along the Meramec river were observed to contain a concentration of tortoise shells somewhat similar to the Adocus shell concentrations at the Chronister site. The tortoise shells represent individuals which fell from the top of the cliffside and were embedded and preserved in the talus. Could a similar mechanism have operated at the Chronister site where a bluff composed of carbonate rocks on the upthrown side of a fault once existed? Since the Cretaceous Period,carbonate solution has removed the bluff, leaving a residue of yellow clay and chert residium adjacent to the impervious fossiliferous Cretaceous clays.

The Specimens of Adocus occurring at the Chronister site might represent a new species of this turtle in view of the geographic isolation of the site from other Cretaceous turtle occurrences.