**Dropstones, Glaciation, and Black Shales: New Inferences on Black-Shale Origins from the Upper Ohio Shale in Northeastern Kentucky,** Frank R. Ettensohn, University of Kentucky, Department of Earth and Environmental Sciences, Lexington, KY 40506, fettems@uky.edu; Thomas R. Lierman, Eastern Kentucky University, Department of Earth Sciences, Richmond, KY 40475, tom.lierman@eku.edu; and Charles E. Mason, Morehead State University, Department of Physical Sciences, Morehead, KY 40351, c.mason@morehead-st.edu

Recently, a nearly 3-ton, granitic boulder was found embedded within uppermost parts of the Upper Devonian (Famennian; *praesulcata* Zone) Cleveland Shale Member of the Ohio Shale in Rowan County, northeastern Kentucky. Other anomalous, igneous and metamorphic boulders have been found near Cleveland exposures in the area, but none were *in situ*, prompting previous workers to ascribe their origins most commonly to ice-rafting in proposed extensive Pleistocene proglacial lakes accompanying glaciation to the north. The *in-situ* nature of the new find, as well as compositional aspects of this and other boulders, strongly suggest an eastern Appalachian origin. Although Gondwanan glaciation was present far to the south at the time, the likely Appalachian sources suggest that ice rafting related to alpine glaciation in the newly elevated Acadian highlands 300–400 km to the east was more likely. This is supported, moreover, by probable tillites and other dropstone-bearing sequences in more proximal deposits of the same age in Pennsylvania and Maryland.

The co-occurrence of black shales and nearby glaciation also suggests yet another set of factors conducive to black-shale deposition. There is no doubt that the unique coincidence of temporal, tectonic, and paleoclimatic-paleogeographic factors at the time strongly favored black-shale deposition, but the presence of nearby glaciation indicated by the dropstones would have enhanced these factors through an influx of meltwater that intensified a salinity-stratified water column and amplified euphotic-zone bioproductivity by increasing levels of meltwater-derived nutrients. In fact, episodes of nearby waxing and waning glaciation in the Acadian highlands may have influenced the course of third- and fourth-order transgressions and regressions seen in the Appalachian black-shale sequence, with the most organic-rich black shales occurring during periods of deglacial melting and transgression.