

The Ordovician Exposed

Contributions from the 12th International Symposium on the Ordovician System

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For nearly two centuries some of the world's most notable geologists and paleontologists have intensively studied the Ordovician rocks of North America. The "layer cake" sedimentary strata deposited in the vast epicontinental seas of the interior and the flanking folded and thrust mountain belts provided both complex problems and fertile ground for new theories and methods. The problem of correlating between regions in the large cratonic interior and between disparate biofacies gave rise to exciting new studies in sequence, event, quantitative, and chemostratigraphy. Distinctive and traceable marker beds, geochemically fingerprinted K-bentonites, and carbon isotope excursions allow for correlation with unprecedented precision, which leads to new questions (and answers) about Ordovician climate and oceanography, global carbon cycling, and the timing of tectonic events. Recent innovations in using geochemistry to study the ancient environment has greatly increased our understanding of Ordovician climate cyclicity and its effects on Earth's biota. Advances in geochronology have given the geologic community amazingly precise dates on Ordovician K-bentonites, increasing the precision and usefulness of our most fundamental tool – the geologic time scale.

In short, it is an exciting time in Ordovician research and the highlights of this work were presented at the 12th International Symposium on the Ordovician System. The conference included fifty-nine talks and 18 posters presentations given by over 80 delegates representing 14 different countries. Its overall theme was Integrated Stratigraphy, and as noted above comprises the latest research in sedimentary geochemistry, geochronology, sequence stratigraphy, event stratigraphy, and quantitative stratigraphic methods. These studies provide the stratigraphic framework and paleoenvironmental context for examining the evolution, diversification, and extinction of Ordovician life. ISOS 2015 also offered 4 field trips - 3 to the southern, central, and northern Appalachian Mountains, and one to eastern and central Oklahoma - to examine classic exposures of Ordovician rocks and the only Ordovician GSSP in the United States.

This theme issue includes nine contributed papers that are an expansion on the presentations of 12th International Symposium on the Ordovician System. We would like to thank the presenters, field trip leaders, and manuscript reviewers, all of whom are essential to a successful symposium.



Participants in the 12th International Symposium on the Ordovician System.