



THE OHIO GEOLOGICAL SOCIETY

An Affiliate (1963) of the American Association of Petroleum Geologists (AAPG)

The Newsletter of the Ohio Geological Society

February 2001

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PRESIDENT'S COLUMN

Just some quick thoughts for this month:

Join OGS and pay your dues -- Come to the Monthly Meetings.
If you have not paid your dues, this will be your last Newsletter.

We'd prefer to E-mail the Newsletters, so if you are still receiving this by US-mail and E-mail would work for you, please let us know.

Start planning for the AAPG National Meeting in Denver:
June 3 – 6, 2001: An Energy Odyssey

Need volunteers to judge Ohio State Science Day on Saturday, April 28

Write an article on a geological related subject or review a geology book for this newsletter.

Submit them to Paul Archer or me. Our e-mail addresses are to the right.

Earthquakes in Ohio and just after our last program !

Reread (or read for the first time) the Morrow County Anthology

Learn more about the Kyoto Accord and the IPCC's position so you can speak out about the unsubstantiated environmental concerns when compared to geologic time. The next meeting of those 170 industrialized countries is in May.

Record high oil and gas prices. Find those "A" developmental and exploratory locations and prospects now. Get as many of them drilled as possible while the prices are up. And watch for the promoters !

And don't forget February 14. Have a good month, John

Note: February meeting date changed from the 19th (President's Day) to the 26th.

Interesting Books for Your Reading:

Planning Land 3-D Seismic Surveys, by Andreas Cordsen, Mike Galbraith and John Peirce, 2000. In book form or CD. An SEG publication.....

What, 3-D exploration in Ohio?

Large Meteorite Impacts and Planetary Evolution II, edited by B.O. Dessler & V.L. Sharpton, 1999. GSA Special Publication #339.....

What, potential hydrocarbon exploration in Ohio?

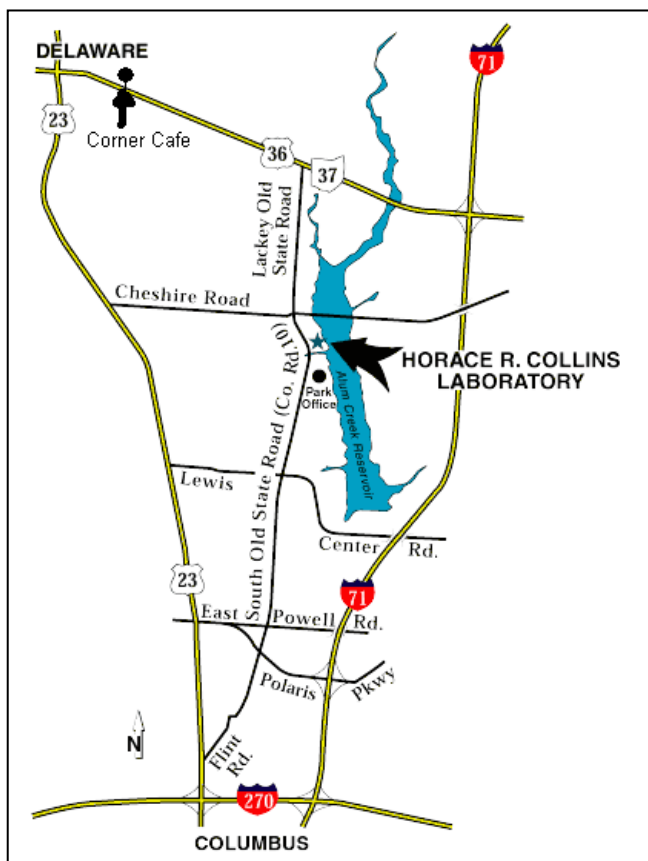
UPCOMING OGS MEETINGS AND EVENTS

February 26, 7:30 p.m. at the H.R. Collins Laboratory at Alum State Creek Park

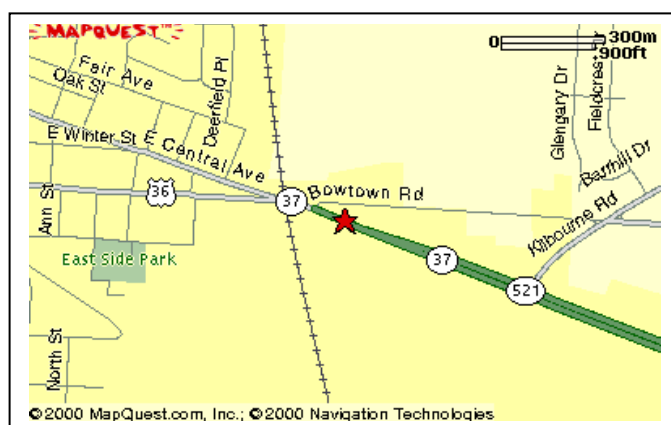
Dr. Doyle Watts, of Wright State University will speak on *Deep Structure and Origin of the Serpent Mound Disturbance* at the Horace R. Collins Laboratory, Alum Creek State Park 3307 South Old State Road, Delaware, OH 43015 (740) 548-7348. Dinner at the Corner Café at 5:30 p.m. Please RSVP for dinner by noon of the day of the meeting (February 26) to Jim McDonald (614-265-6601). For more information, please contact Jim McDonald at (614) 265-6601 or by e-mail at jim.mcdonald@dnr.state.oh.us

Abstract: The Serpent Mound disturbance is a well known anomaly in the Ohio geological record. Theories as to its origin are divided between endogenic (volcanic) and exogenic (impact) themes. It is a roughly circular area, about 8 miles in diameter, with three major elements. The central uplift is characterized by intense deformation and the occurrence of rocks that are about 300 meters higher than their normal level. The outer graben contains mildly deformed rocks that have dropped down about 300 meters below their normal level. The transition zone represents a boundary area separating these two elements.

The present work was funded by The Royal Society of London, and done in close collaboration with Mark Baranoski and Gregory Schumacher at the Ohio Department of Natural Resources (ODNR) who systematically investigated two deep nearly continuous cores drilled from the central uplift and the transition zone. We report the interpretation of reprocessed seismic lines, new potential field data and paleomagnetic data. Seismic line BV-1 (donated to the Ohio Department of Natural Resources by Paragon Geophysical) crosses the central uplift. Seismic line SM-1 (released by Western Geophysical) crosses the outer graben on the eastern margin. Reprocessing of line SM-1 reveals a probable ring anticline in the subsurface beyond the boundary of the structure as indicated by surface mapping. Seismic line BV-1 shows Cambrian reflectors passing continuously below the central uplift, but bowed downwards. Above the Cambrian reflectors is a lens shaped zone with no continuous reflectors that corresponds with the central uplift. A high resolution gravity survey along line BV-1 reveals a local negative anomaly with a ~1 mgal amplitude superimposed on a regional gravity anomaly. The local anomaly coincides with the lens shaped zone and is likely related to the increased fracture intensity in the central uplift. We confirm the presence of a magnetic anomaly, known since Luther Sappenfield discovered it in 1951. Paleomagnetic and stratigraphic data indicate that the Serpent Mound structure was formed during the late Paleozoic. The observed subsurface structural features are not necessarily diagnostic of the manner of formation of the Serpent Mound structure. However, Richard Carlton of ODNR reports the discovery of shocked quartz grains from the deep core drilled from the central uplift, which favors the impact origin.



MAP TO THE H.R. COLLINS LABORATORY AND TO THE CORNER CAFÉ



MAP TO THE CORNER CAFÉ

OTHER OGS ANNOUNCEMENTS

Membership Dues Are Due: The membership dues for the 2000-2001 year are due. Your yearly dues help support a number of different programs, such as the monthly newsletter, monthly meetings, yearly workshops and seminars, and student activities. Dues for the year are \$20 for Active and Associate members, and \$5 for students. We plan on publishing a new membership directory this year.

PUBLICATIONS

The in-print publications of the Ohio Geological Society may be purchased from the Ohio Division of Geological Survey. Members of the Society receive a discount; the member price is in parentheses (M:). For more information, write the Ohio Geological Society, P.O. Box 14304, Columbus, OH 43214.

OGS 1. Guidebook to the Middle Devonian rocks of north-central Ohio, by A. Janssens. 30 p., 1970. \$2.50. (M: \$2.00).

OGS 2. Geology of Silurian rocks, northwestern Ohio, by C. F. Kahle and J. C. Floyd. Guidebook for First Annual Meeting, Eastern Section, American Association of Petroleum Geologists. 91 p., 1970. \$7.00 (M: \$6.00).

OGS 3. Seminar on industrial self-help programs for natural gas supplies, edited by Arie Janssens. 55 p., 15 figs., 1 table, 1977. \$3.50 (M: \$3.00).

OGS 4. Clinton sandstone papers presented at the Ohio Oil and Gas Association Winter Meetings 1961 to 1978 (abridged reprint of 1980 volume). 228 p., 1985. \$25.00 (M: \$20.00).

OGS 5. The new Clinton collection--1985, edited by Jack Gray, Andy Maslowski, Warren McCullough, and W. E. Shafer (2nd printing). This edition includes a transcript of "Deeper Clinton-Medina drilling in southeastern Ohio" from a March 1986 Ohio Geological Society meeting. 257 p., 1985. \$25.00 (M: \$20.00).

OGS 6. Principles of seismic exploration. A collection of papers from a seminar presented at the 1987 AAPG Eastern Section meeting. 1987. Out of print.

OGS 7. Computer-aided analysis of geologic data, edited by Lawrence H. Wickstrom. A collection of papers from a seminar presented at the 1987 AAPG Eastern Section meeting. 100 p., 1987. \$15.00 (M: \$12.00).

OGS 8. Maps and cross sections of the Cambrian and Lower Ordovician of central Ohio, by G. G. Shearrow. 31 p., 8 pls., 1987. \$12.00 (M: \$10.00).

OGS 9. An update on Ohio's subsurface geology. Proceedings from the October 1993 technical symposium held in Canton, Ohio. 11 papers, separately paged, 1993. \$25.00 (M: \$20.00).

OGS 10. The Ohio Geological Society anthology, the Morrow County, Ohio "oil boom" 1961-1967 and the Cambro-Ordovician reservoir of central Ohio, edited by William E. Shafer. 452 p., 1994. \$65.00 (M: \$55.00).

OGS 11. Major natural gas plays of the Appalachian basin and surrounding areas. Proceedings from the October 1994 technical symposium held in Canton, Ohio. 11 papers, separately paged, 1994. \$25.00 (M: \$20.00).

OGS 12. Structural influences on oil and gas reservoirs. Proceedings from the October 1995 technical symposium held in Canton, Ohio. 14 papers. 129 p., 1995. Out of print.

OGS 13. Enhanced recovery--historical development and future potential in Ohio and the Appalachian Basin and Integration of geology and geophysics in exploration. Proceedings from the October 1996 technical symposium held in Akron, Ohio. 16 papers. 209 p., 1996. \$25.00 (M: \$20.00).

OGS 14. Ohio Geological Society Fifth Annual Technical Symposium. Proceedings from the November 1997 technical symposium held in Akron, Ohio. 11 papers. 117 p., 1997. \$25.00 (M: \$20.00).

OGS 15. Petroleum Seismology in the Digital Age. Course notes from the Ohio Geological Society's 3-D Seismic Seminar presented at the 1998 AAPG Eastern Section meeting. \$20.00 (M: \$15.00).

OGS 16. Fossil Collecting in the Silica Formation at Sylvania, Ohio. Guidebook for the 1998 AAPG Eastern Section meeting. 16 p., 1998. \$7.00 (M: 6.00).

OGS 17. Into The New Millennium: The Changing Face of Exploration In The Knox Play. Proceedings from the Sixth Annual Fall Symposium held in Akron, Ohio, October 1999. 12 papers. 120 p., 1999. \$25.00 (M: \$20.00).

To order any of the Society's publications call or write: The Geologic Records Center, Ohio Geological Survey, 4383 Fountain Square Drive, Columbus, Ohio 43224-1362. Telephone (614) 265-6576. E-mail: geo.survey@dnr.state.oh.us.

2000-2001 Meeting Schedule

September 2000

No Meeting

October 2000

October 9

Joint Meeting with Appalachian Geological Society. AAPG Distinguished Lecturer Dr. John Warme – *Anatomy of an Anomaly: The Catastrophic Devonian Alamo Impact Breccia, Nevada.*

October 25

PTTC/Ohio Geological Society Fall Workshop - *Nuts and Bolts of Digital Geologic Analysis.*

November 2000

November 6

Dr. Greg Nadon, Ohio University. *The Application Of Sequence Stratigraphy To Low Accommodation Settings.*

December 2000

December 1

3rd Annual OGS Christmas Party.

January 2001

January 22

Tour of Ohio Geological Survey's Geologic Sample Repository and the Ohio Earthquake Information Center.

February 2001

February 26

Dr. Doyle Watts, Wright State University. *Deep Structure and Origin of the Serpent Mound Disturbance*, 7:30 p.m., Horace R. Collins Laboratory, Alum Creek State Park.

March 2001

March 19

Joint Meeting with SPWLA. Dr. Robert Milici, U.S. Geological Survey. Coal Bed Methane in the Appalachian Basin. Time and location TBA.

April 2001

April 23

AAPG Distinguished Lecturer F. Jerry Lucia. 7:00 p.m., location TBA.

May 2001

TBA

The Ohio Geological Society

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(We would prefer to E-mail you this Newsletter. Please send us your E-mail address.)

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