



THE OHIO GEOLOGICAL SOCIETY



The Newsletter of the Ohio Geological Society

November 2008

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

2008-2009 Officers

President

Chris Gordon
Ohio Geological Survey
2045 Morse Rd., Bldg. C-1
Columbus, OH 43229
(614) 265-6594
chris.gordon@dnr.state.oh.us

Vice President

Steve Zody
Zody Geoscience
P.O. Box 921
Wooster, OH 44691
(330) 262-4323
zodyoil@sssnnet.com

Secretary

Amy Lang
Forman Energy, Ltd.
P.O. Box 340346
Columbus, OH 43234
(614) 717-9262
amy.lang@formanenergy.com

Treasurer

John Miller
Enervest Operating, LLC
110 E. Wilson Bridge Rd.
Worthington, OH 43085
(614) 436-4631
jmiller@enervest.net

On Wednesday the Society will hold the first meeting of the year at the usual venue, the Midwest Hotel & Conference Center. Heather Raymond of Ohio EPA's Division of Drinking & Ground Water will present her ground water investigation done in Clark County.

In other meeting news, AAPG has confirmed that they have scheduled Chip Feazel for a Columbus visit in March. Chip is a part of AAPG's Distinguished Lecture Program and was our first choice. Members of the executive committee will be looking into a possible co-host for the talk.

I'd like to add a new section to the column that I'll include in each month's newsletter. The purpose of the section is to hopefully add to your current knowledge of the history of geology:

Most of you know the name Harry Hess, and his theory proposed in 1960 of "sea-floor spreading." However, do you know the origin of the theory of plate tectonics? Alfred Wegener was the first to propose the theory of "continental drift" in the year 1912 after noticing the matching coastlines of South America and Africa. In 1930, Arthur Holmes suggested that the driving force behind "continental drift" was mantle convection. However, Holmes did not have any scientific evidence to back up his theory. American physicists Maurice Ewing and Bruce Heezen discovered the deep canyon within the midocean ridge system in 1953, which prompted Hess to re-evaluate his previously collected soundings and propose the theory of "sea-floor spreading." His theory was later confirmed by Fred Vine and Drummond Matthews in 1963 with their discovery of alternating polarization in bands of oceanic crust.

Although Wegener was not the first to notice the matching shorelines, he was the first to infer that they might not have always been where they are today. His suggestion was met with much criticism at the time, but led to the now accepted theory of plate tectonics!

Chris Gordon

OGS MEETING

Wednesday, November 5th

Lunch at 11:30, talk at 12:30 pm

Midwest Hotel & Conference Center
4900 Sinclair Road
Columbus, OH 43229
<http://www.ramadahotelcolumbus.com/>

Please RSVP to Steve Zody at
zodyoil@sssnet.com or 330-262-4323

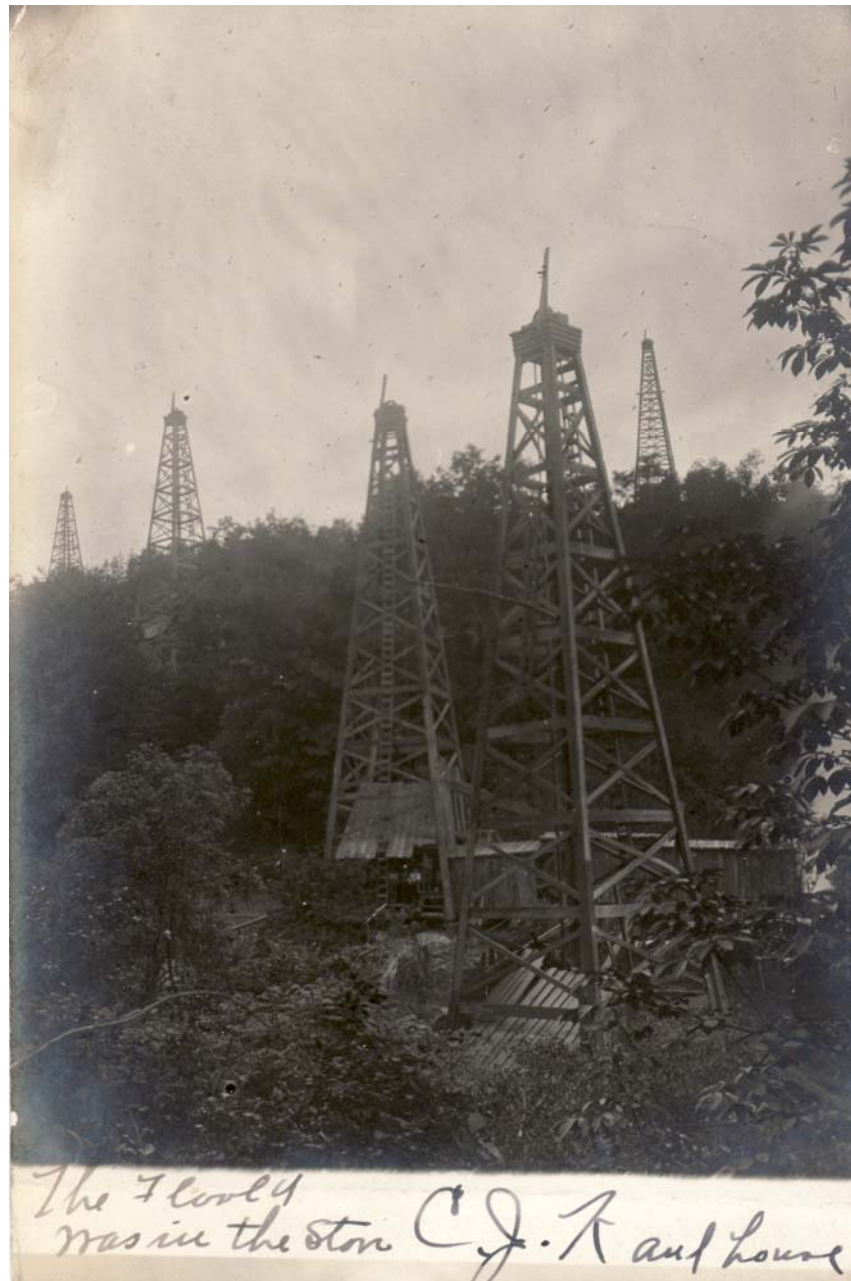


Field Investigations and Fluorescein Dye Traces Provide Evidence of Karst Hydrogeology in the Dissected Niagara Escarpment, Clark County, Ohio

Heather Raymond

Bio: Heather Raymond has worked for the Ohio Environmental Protection Agency in the Division of Drinking and Ground Waters for 12 years where she is currently a lead hydrogeologist for the Water Quality Characterization and Protection Section. She earned Masters' degrees in hydrogeology and public administration from Ohio University.

A ground water investigation in the Dissected Niagara Escarpment in Mad River Township, Clark County, Ohio provided evidence that the local carbonate aquifer has the features and hydraulic properties of a karst aquifer. Sinkholes, disappearing streams, exposed bedrock, caves, and springs were identified within the region and two fluorescein (uranine) dye traces were conducted in separate sinkholes. U.S. EPA's Environmental Hydrologic Tracer Design model was used to estimate quantities of dye needed for each trace, end point dye concentrations, and optimum sampling frequencies. The first dye trace was conducted during a wet weather period and yielded an average ground water flow rate of 28,800 feet/day. The second dye trace was conducted during a dry weather period in a less-developed sinkhole and yielded an average flow rate of 3,100 feet/day. Dye was detected in multiple springs and private water system wells and results indicate that ground water pathways may vary with fluctuating water levels. The model-predicted dye concentration curves were a close match to the actual concentration curve observed during the first wet weather trace, but did not correlate as well with the concentration curves observed during the second trace. Water samples were collected at local springs, streams, and private and public water supply wells. Nitrate concentrations ranged from 0.21 – 12.9 mg/l, with the highest concentrations detected in springs. Down-hole camera videos were recorded at two wells in the study area, and depicted evidence of macroinvertebrates and perhaps salamander larvae present below the water table. This was the first investigation of its kind in the Ohio Dissected Niagara Escarpment and provides evidence that the region behaves as a karst aquifer, with some of the fastest ground water flow rates ever measured in the state. The investigation also helps confirm the sensitivity of the shallow karst aquifer to contamination.



*The Floody
was in the store C. J. K and house*

Reas Run oil field in Independence Township, Washington Co., Ohio. Reas Run parallels Archer's Fork Road (CR-14) which intersects Ohio State Route 7 at Wade, approximately 20 miles east of Marietta, along the Ohio River. The field produced from the Big Injun sands. The postcard was postmarked on 3/23/1907 in Wade (active post office from 1864-1956) and then again on 3/25/1907 when received in Tulsa Indian Territory (Oklahoma became a state later that year - 11/16/1907). Many oilfield workers of OH, PA, and WV moved on to work the oilfields of TX, LA, OK, and KS. Thanks to Carl Heinrich of Reno, OH for identifying the photo and for providing a visit to the approximate site of the photo. (Photo from Jeff Spencer collection; similar postcard in Carl Heinrich collection).

Publications of the Ohio Geological Society On CD-ROM



Publications of the Ohio Geological Society now available as a CD-ROM and online with AAPG/Datapages.

OGS is the newest collection added to the Marketing Partners program in AAPG/Datapages whereby local and regional geological societies list their publication archives in the online literature database for upstream E&P. We now host more than 30 publishers in our program.

All the Archive papers of the OGS are included in CD-ROM format, and available for sale at a regular price of \$120. The CD-ROMs can be purchased at the website:

WWW.AAPG.ORG

All the individual papers also are online for search-and-retrieval at the AAPG/Datapages Combined Publications Archives website. Non-subscribers can access these at our Transactional (pay-per-view) website:

<http://payperview.datapages.com/>



Figure Caption: Grand Lake St. Marys, near Celina, Ohio, may have been the site of the first overwater drilling operation of oil-and-gas wells. Starting in 1891, the drilling of oil-and-gas wells of the Lima-Indiana fields extended into the lake. Over 100 wells had been drilled into the lake by the time the field was abandoned after 1910.

OGS Members welcome.....

AIPG OHIO SECTION ANNUAL MEETING

Date: November 14, 2008

Time: 5-9 p.m.

Program: Understanding Climate Change: Stories from the Ice

Dr. Ellen Mosley-Thompson

Professor, Department of Geography, Ohio State University
Research Scientist, Byrd Polar Research Center

Earth's glaciers and ice sheets preserve long and detailed records that chronicle changes in our climate and environment over thousands of years. Coupled with other observations and climate model results, the ice core data confirm that some observed climate and environmental changes are now well outside the range of natural variability for at least the last few thousand years and in some cases for many millennia. Widespread melting of mountain glaciers threatens both water resources for many heavily populated regions and the unique climate histories archived in these glaciers and ice caps.

Place: La Scala - Italian Bistro

Location: 4199 W. Dublin Granville Rd, Dublin, OH

www.aipg-ohio.org

Regular members and their guests \$25. Student members free.

CALENDAR

Information available for OGS meetings at: www.ohgeosoc.org or contact Steve Zody at zodyoil@sssnet.com, 330-262-4323.

- November 5** **OGS Meeting** – “Field Investigations and Fluorescein Dye Traces Provide Evidence of Karst Hydrogeology in the Dissected Niagara Escarpment, Clark County, Ohio” - Heather Raymond. Midwest Hotel & Conference Center, Columbus, OH.
- November 14 AIPG Ohio Section Annual Meeting – “Understanding Climate Change: Stories from the Ice” – Dr. Ellen Mosley-Thompson. La Scala Restaurant, Dublin, OH. www.aipg-ohio.org

Check the OGS website at www.ohgeosoc.org or PTTC's at <http://karl.nrcce.wvu.edu> for other meetings and events.

Ohio Geological Society
P.O. Box 14304 • Columbus, OH 43214
<http://www.ohgeosoc.org/>

Ohio Geological Society 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 on the Society, write the Ohio Geological Society, P.O. Box 14304, Columbus, OH 43214.

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 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 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. \$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 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. 16 papers. 120 p., 1999. \$25.00 (M: \$20.00).

To order any of the Society's publications contact: The Geologic Records Center, Ohio Division of Geological Survey, 2045 Morse Road, Columbus, Ohio 43229-6693. Telephone (614) 265-6576. FAX: (614) 447-1918. E-mail: geo.survey@dnr.state.oh.us.