

Looking at Historical Scientific Reports from a Local History Perspective: Orange County as an Example

By Lou Malcomb and Richard L. Powell.

Throughout the 1800's and early 1900's, Indiana was not only invaded by settlers, politicians, and soldiers but by numerous scientists surveying its vegetation, soil, water, and rocks. Many of these issued reports through their sponsoring agencies in annual reports or bulletins. These reports are often overlooked by genealogists and historians because they are less known but also because their titles and perceived content simply have escaped notice. This article will explore some of the early scientific reports with emphasis on geological reports. Many include descriptive narratives of the landscape, its inhabitants, its roads and natural features, as well as maps. Many of these reports are now available via internet sources, increasing their accessibility. The reports, from a wide range of sources, cover all ninety-two counties of Indiana, but we are highlighting the ones for Orange County as an example. For the Annual Reports from the Indiana Department of Conservation's geologic area, known under a variety of agency names but now recognized as the Indiana Geological Survey see: IU ScholarWorks Indiana Geological Survey's community <https://scholarworks.iu.edu/dspace/handle/2022/154>. We wanted also to note that the Indiana Geological Survey is celebrating its 175th anniversary this year, established February 6, 1837 by the Indiana Legislature.

Orange County is the perfect county to use as an example because of the direct impact natural resources played in the settlement of Orange County. The 1884 *History of Orange County*¹ confirms this thesis in its opening chapter, "Geology, Native Woods, The Perpendicular Section...." as does the *Orange County historic sites and structures: an interim report of the Indiana Historic Sites and Structures Inventory*². The interim reports states, "The area's geology, limestone studded with caverns and sulfurous mineral springs, contributed to the county's history and development."

Because I am neither a geologist nor even a general scientist, I asked Dr. Richard Powell, a noted research scientist with the Indiana Geological Survey, to compile a list of the early reports about Orange County. Dr. Powell is probably best known for his 1961 IGS Circular no. 8, *Caves of Indiana*³, long out of print. He went beyond that and also annotated these sources which, of course, add value to bibliography. To explore similarly for other counties and localities, one may use Google (<http://www.google.com/>) but most of the reports are digitized in the HathiTrust (<http://www.hathitrust.org/>). Publication lists do exist for many of the primary agencies/organizations. For instance, Nevers and Walker produced an *Annotated bibliography of Indiana geologic publications* in 1961.⁴ There are also indexes to the Proceedings of the Indiana Academy of Science.⁵ No index or list of reports is available for the *Annual report of the Indiana State Board of Agriculture* published between 1851 and 1908 but they frequently include an abstract of each county's agricultural society with information about the county fair: <http://catalog.hathitrust.org/Record/010307412>, nor is there an index or list of reports included in the *Indiana State Board of Health's annual reports or bulletins* but they are now searchable in the HathiTrust: <http://catalog.hathitrust.org/Record/000060971>. The 1887 report includes a sanitary survey with description of several county asylums and prisons for Lawrence, Orange, and a few other counties.

I believe Dr. Powell's list illustrates the variety and scope of early scientific literature and the value to local history. It may not be obvious, however, the wonderful reading and genealogical clues these early reports provide. The 1869 report written by David Dale Owen illustrates the value but also the, dare I call it, beauty included.

<http://www.libraries.iub.edu/index.php?pageId=1002192>

Using the digital search capability now available through Google but most importantly the HathiTrust, librarians have the capability of pin-pointing sections within reports, often produced by the state government, that contain descriptive information about towns, places, counties, and communities. Some of these reports will be treasured and others will provide descriptions we'd often prefer not to know about such as sanitary conditions less than favorable to our home communities. One note about the HathiTrust, it is available to the public but on a somewhat limited basis, i.e. page-by-page, where members can retrieve full PDFs. I assure you the search is worth the effort.

I had been searching for information about the county farm in Monroe County for some months.

While preparing this article, I searched the "Indiana bulletin of charities and correction" and found a wonderful two page description. The potential for exploring library history and numerous other directions remain for all of you to explore.

Bibliography of early geologic and scientific reports on Orange County by Dr. Richard Powell, arranged chronologically.

Brown, S. R., 1817. *The Western Gazetteer*; or emigrant's directory: material relating to Indiana, p. 37-80, reprinted in H. Lindley, 1916, Indiana as seen by early travelers: p. 136-170. Orange County p. 158-159 in Lindley, 1916.

Brown's description of geographic features in Orange County is mostly incorrect owing to inclusion of Lawrence and most of Monroe counties at the time of his visit, but in any case did not include the juncture of White River with the East Fork White River.

Thomas, David, 1819. *Travels Through the Western Country in the Summer of 1816*: Auburn, N. Y., David Rumsey, printer 320 p., 1 pl. (not seen), reprinted in part, p. 110-187, 189-233, and 240-241, in Lindley, H., 1916, *Indiana as Seen by Early Travelers: Indiana Historical Commission*, 596 p. David Thomas item pages 42-135, no plate.

Mostly historical information, with scenic descriptions of Orange County, but contains the earliest known mention of whetstone mining in Orange County as prior to 1816 on p. 61.

Chamberlain, E., 1849. *The Indiana Gazetteer, or Topographical Dictionary of the State of Indiana*. Indianapolis, E. Chamberlain.

Owen, D.D., 1859, reprinted and modified. *Report of a Geological Reconnaissance of the State of Indiana* : made in the year 1837, in conformity to an order of the Legislature: Part First, 63 p., J. C. Walker, state printer, and combined with Part Second , 69 p. dated 1838.

There are numerous reprints and revised or modified versions of the original 1837 and 1838 reports by Owen (see Gray, H. H. 1987), which should be consulted if historical accuracy is important, otherwise the 1859 version will suffice for geologic content of geologic content related to Orange County.

Owen, Richard, 1862. *Report of a Geological Reconnaissance of Indiana: Indiana Legislature*, H. H. Dodd and Co., Indianapolis, In. 368 p., 8 pls.

Orange County is discussed p. 140-146. Lost River is covered briefly with two figures on p. 140- 144, whetstones p. 144-145, and grindstones p. 146.

Asher, Adams, and Higgins, 1870. *New Topographical Atlas and Gazetteer of Indiana*; Library of Congress, published by Higgins & Ryan, Indianapolis, In. 79+ p., maps one inch to five miles.

Maps of Orange County p. 8 and p. 11 with very generalized geologic contacts from geologic map by R. T. Brown, 1854.

Elrod, M. N., and McIntire, E. S., 1876. *Orange County: Indiana Geological Survey*, annual report 7, p. 203-239.

Summarized in part by Goodspeed Bros. & Co, publishers (1884, p. 355-665) which was reprinted verbatim by the Paoli Business and Professional Woman's Club (1950, p. 5-17).

A brief account of various aspects of the geology of Orange County, including topography, some scattered stratigraphic sections with mention of fossil content at some localities, and a few details of economic deposits of mineral waters, lime, sandstone building stone, grindstones, whetstones and coal. Several pages relate to sinkholes, subterranean drainage, particularly some features of Lost River. This report did not include a map.

Goodspeed Bros. & Co., publishers, 1884. *History of Lawrence, Orange, and Washington Counties Indiana*: Chicago, Il. 937 p. *History of Orange County*, Chapter I, p. 355-367.

Chapter I is a brief summary of some information from Elrod and McIntire (1876). Reprinted verbatim by Paoli Business and Professional Womans Club (1950).

Kindle, E. M., 1896. *The Whetstone and Grindstone Rocks of Indiana*: Indiana Department of Geology and Natural Resources, annual report 20, p. 328-368, 1 map.

This report is the most definitive regarding the whetstone and grindstone industries which were mostly associated with Orange County in Indiana. The geologic map, one-half inch per mile, shows the locations of many of the quarries as well as other economic deposits, landforms and cultural features of the area.

Salyards, O. C., 1896. *At an Indiana Whetstone Quarry*: Stone, v. 13, p. 539-540.

A very short description of the whetstone deposits, the products manufactured, the presence of sandstone grindstones, and a local example of a whetstone operation. Anonymous, 1896, untitled: Stone, v. 13, p. 540-543. "Supplementary to the above we add some portions of a report appearing in the 20th Report of the Indiana Geological Survey" (E. M. Kindle, 1896, p. 328-368). A good, but very short article appended to the item by O. C. Salyards (1896, p. 539-540).

Ashley, G. H., 1899. *The Coal Deposits of Indiana*: Indiana Department of Geology and Natural Resources, annual report 23, p. 1-1573, 91 pls., 986 figs., 7 maps.

The report includes a little more than five pages (p.1081-1088) on the meager coal deposits of Orange County along with a detailed map (Sheet E) that locates crop outs of coal and coal mines. Locations of whetstone, sandstone and limestone quarries are also shown.

Elrod, M. N., 1899. *The Geologic Relations of some St. Louis Group Caves and Sinkholes*: Indiana Academy of Science proceedings for 1898, p. 258-267.

Elrod first used the name Paoli for the rocks at the top of the Mitchell Group, now the top of the Blue River Group and named the Lost River chert, now the Lost River Chert Bed (p. 259). Elrod includes scattered references to sinkholes, caves, springs, and limestone quarries in Orange County.

Ashley, Geo. H. and Kindle, E. M., 1903. *The Geology of the Lower Carboniferous Area of Southern Indiana*: Indiana Department of Geology and Natural Resources, annual report 27, p. 49-122, 13 pls, 3 figs, 2 maps.

This report briefly covers the physiography and stratigraphic geology of five counties including the first geologic map of all of Orange County. Scattered references to parts of Orange County are primarily from pages 63 to page 74, p. 102, and plate V (plates VIII, IX and X are missing from the report). Whetstone and grindstone quarry locations, probably from the E. W. Kindle (1896) report, are shown on the map.

Blatchley, W. S., 1903. *The Mineral Waters of Indiana; their Location, Origin and Character*: Indiana Department of Geology and Natural Resources, annual report 26, p. 11-158, 19 pls.

The mineral springs, wells and associated spas are listed by county, with Orange County covered from pages 96 to 113 and plates X to XV, and the frontispiece, plate I. Analysis of some water samples are included.

Newsom, J. F., 1903. *A Geologic Cross Section Across Southern Indiana, from Hanover to Vincennes*: Indiana Department of Geology and Natural Resources, annual report 26, 227-302, 3 pls., 19 figs (Plates in the annual report are I, II, and VII).

The line of cross section follows Township 3 North, with coverage that includes parts of townships 2 East to 2 West along the northern three rows of sections in Orange County. The maps are at a scale of one-half inch per mile, with a 40 foot contour interval on the topographic part and geology similar to that provided by Ashley and Kindle (1903) on the other part. Data on Orange County is meager, but is mostly found on pages 283-286, mentioning sandstone building stone, grindstones and whetstones, and kaolin.

Rhodes, A. J., 1905. *The Wonders of Lost River*: privately published, French Lick, In. 21 pages. Item reprinted in Dillard (1971, p. 201-209).

Rhoades' article is mostly an exaggerated second hand account of some trips into the caves of Lost River entered at Wesley Chapel Gulf by several people about thirty years before his interview. He mentions the geological report by Elrod and McIntire (1875), reprinted in Goodspeed (1884) but ignores their information. The report mentions numerous lime kilns along the bluffs of Lost River downstream of the spring at Orangeville and another spring below Orangeville (p. 18).

Blatchley, W. S., 1906. *The Roads and Road Materials of a Portion of Central Southern Indiana*: Indiana Department of Geology and Natural Resources, annual report 30, p. 873-939.

Includes historic data on roads and sources of road materials in Orange County, p. 922-930 and map as Figure 53A. Lists some crushed stone quarries, gravel sources, and associated costs, equipment used, and quality of roads.

Shannon, C. W., and L. C. Snider, 1908. *Soil Survey of Monroe, Brown, Lawrence, Martin, Orange, Washington, and Jackson Counties*: Indiana Department of Geology and Natural Resources, annual report 32, p. 119-196, 8 pls., 7 maps.

The report offers some brief data on the history and physiography of Orange County (p.170-176), but is of little value for geologic content. The included soils map is a poor copy of the geologic map from Ashley (1903) with geologic units relabeled as soil types.

Beede, J. W., 1911. *The Cycle of Subterranean Drainage as Illustrated in the Bloomington, Indiana, Quadrangle*: Indiana Academy of Science proceedings for 1910, p. 81-111, 32 figs.

There is a mention of Lost River on p. 86-87 with photograph (fig. 5) of the dry bed. Photographs of the "Gulf" of Lost River (figs. 22, 23 and 24).

Cummings, E. R., 1912. *The Geologic Conditions of Municipal Water Supply in the Driftless Area of Southern Indiana*: Indiana Academy of Science proceedings for 1911, p. 111-146, 9 figs.

This report in part discusses geology related to water supply in non-glaciated central southern Indiana, with some examples from Orange County. The occurrence of sulphur water in the French Lick area is mentioned p. 130-131 as are the wells at French Lick and West Baden p. 137-139.

Logan, W. N., 1919. *Kaolin of Indiana*: Division of Geology, Indiana Department of Conservation, Publication. No. 6, 131 p., 52 pls.

Kaolin deposits in Orange County mentioned p. 117-119, with geologic map showing kaolin locations on page 118.

Logan, W. N., 1922. *Economic Geology of Indiana, in Handbook of Indiana Geology*: Indiana Department Conservation. Publication 21, pt. 5, p. 571-1058, 161 pls.

There is a one sentence mention of a coal in the Mansfield Formation on p. 631. Natural abrasives mentioned p. 779-781, with minor reference to Orange County, p. 779-780, plates 87 & 89. Republication of report by Logan, 1919, on kaolin on p. 747-748, with same map. A short report on petroleum possibilities in Orange County, with two structure maps on p. 952-953.

Malott, C. A., 1922. *The Physiography of*

Indiana Libraries, Vol. 31, Number 2

Indiana, in *Handbook of Indiana Geology*: Indiana Department of Conservation. Publication 21, pt. 2, p. 59-256, 3 pls., 51 figs.

There are several references, mostly to karst features, in the Mitchell Plain and Crawford Upland physiographic divisions of Indiana that include all of Orange County. Malott discusses the characteristic features defining the Mitchell Plain and Crawford Upland with some mention of places in Orange County (p. 94-102 and fig. 11). Some additional details of development of the Mitchell Plain with mention of examples in Orange County are given p. 190-197, with particular reference to the significance of the Lost River chert p. 191.

Lost River and its subterranean drainage is discussed p. 203-210 and figs. 37-39. Details of the development of the Crawford Upland are given (p. 215-247) but with little mention of Orange County.

Malott, C. A., 1925. *The Upper Chester of Indiana*: Indiana Academy of Science proceedings, v.34, p. 103-132, 11 figs. Measured section no. 16 located in Orange County, p.107, 129-130 and map as fig. 11.

Malott, C. A., 1926. *The Glacial Boundary in Indiana*: Indiana Academy of Science proceedings for 1925, v. 35, p. 93-107, 6 figs. Malott mentions glacial ponding in Orange County as far upstream as the Orangeville Rise.

Malott, C. A., 1929. *Three Cavern Pictures*; Indiana Academy of Science proceedings for 1928, v. 38, p. 201-206; Indiana Department of Conservation. Publication 136. Lost River and Wesley Chapel Gulf are briefly discussed p. 201-203.

Indiana Division of Geology, 1932. *Geologic Map of Indiana*: Division of Geology. Publication 112, scale one inch to four miles.

This is a revision of geologic map published by W. S. Blatchley in 1903 and includes simple division of geology of Orange County as strata of Mississippian or Pennsylvanian Ages.

Malott, C. A., 1932. *Lost River at Wesley Chapel Gulf, Orange County, Indiana*: Indiana Academy of Science proceedings for 1931, v. 41, p. 285-316, 12 figs.: Indiana Department of Conservation. Publication 149.

Defines the terms *karst*, *gulf*, *swallow hole*, *dry bed*, *mud stalagmite*, among others, and discusses the major features of subterranean drainage of the Lost River area of Orange County, particularly the Wesley Chapel Gulf, Elrod Cave and their mapped cavern passages.

Malott, C. A., and R. R. Shrock, 1933. *Mud Stalagmites*: American journal of science., v. 25, p. 55-60, 2 figs.

Describes mud stalagmites from Elrod Cavern and discusses their origin.

Von Osinski, W. P., 1935. *Karst Windows*: Indiana Academy of Science proceedings for 1934, v. 44, p. 161-165, 2 figs.

Describes *karst window* and gives examples including references to examples in Orange County; four in the headwaters area of Stampers Creek, p. 164, and Peacher's Cave, p. 165.

Indiana Division of Geology, 1939. *Guide to Indiana Caverns*: Indiana Department of Conservation, 16 p., mimeograph. This provides a brief description of Lost River Cave at Wesley Chapel Gulf and nearby Elrod Cave, p. 13.

Stipp, Edith S., 1942. *Unique Sharpening Stone Industry Founded in Pioneer Days*: Yearbook Society of Indiana Pioneers, p. 2-9, 4 figs. Reprinted 1971, Orange County heritage: A. L. Dillard, ed., p. 53-62. An account of the development of the whetstone industry in Orange County, less than historically accurate in places.

Malott, C. A., 1945. *Significant Features of the Indiana Karst*: Indiana Academy of Science proceedings 1944, v. 54., p. 8-24, 11 figs.

Malott gives brief definitions of about 35 karst features that occur in the limestone areas of central southern Indiana, many which are present in Orange County and are used as typical examples.

This is a very significant reference in general to karst features in Orange County.

Malott, C. A., R. E. Esarey, and D. F. Bieberman, 1948. Guide book: Second Annual Geologic Field Conference, May 7, 8, and 9, 1948 on Upper and Middle Mississippian Formations of Southern Indiana. 26 p., 8 figs., 2 pls.

Six brief notations on the roadside geology along State Road 37 in Orange County are on p. 6-7 and plate 1.

Malott, C. A., 1949. *Hudelson Cavern, a Stormwater Route of Underground Lost River*; Indiana Academy of Science proceedings for 1948, v. 58, p. 236-243, 1 fig.

Malott includes a description of Hudelson Cavern and its significance as a segment of the subterranean system that is a hidden part of Lost River.

Malott, C. A., 1949. *A Stormwater Cavern in the Lost River Region of Orange County, Indiana*: National Speleological Society. Bulletin 11, p. 64-68, 1 fig. This is a partially rewritten version of the 1948 paper on Hudelson Cavern.

Paoli Business and Professional Womans Club, 1950. *History of Orange County, Indiana, Volume I*: 320 p., Stout's Print Shop, Paoli, In. Reprint of Goodspeed Bros. & Co. (1884, p. 355-367).

McGrain, Preston, and O. L. Bandy, 1954. *Origin and Development of Caverns in the Beech Creek Limestone in Indiana*: National Speleological Society bulletin 16, p. 65-70, 5 figs.; (abs.) Indiana Academy of Science proceedings for 1954, v. 64, p. 175, 1955.

Includes map and description of cave and jointing in Bear Cave, p. 67, located about one and a half miles west of French Lick.

Perry, T. G. and N. M. Smith, 1958. *The Meramec-Chester and Intra-Chester Boundaries and Associated Strata in Indiana*: Indiana Geological Survey bulletin 12, 110 p., 6 pls. (incl. geologic map), 1 fig.

The half inch per mile geologic map includes all of Orange County and shows crop lines for four major geologic groups and locations of eight measured sections (10, 12, 13, 14, 15, 16, 29, and 30) discussed in the text.

Wayne, W. J., 1963. *Pleistocene Formations in Indiana*: Indiana Geological Survey bulletin 25, 85 p., 4 pls., 8 figs. 2 tables.

Discusses six proposed unconsolidated deposits of Pleistocene (ice age) Age deposits in Indiana, including the Prospect Formation of pre-Wisconsinan (before the last glacial stage) Age, which has its type locality at Prospect in Orange County, p. 16-17, 38-42 and 69, and fig. 2.

Dillard, A. L., 1971. *Orange County Heritage*: 239 p., Stout's Print Shop, Paoli, In.

Contains reprinted articles by Stipp (1942) p. 53-62 and Rhodes (1905) p. 201-209.

Footnotes:

History of Orange County, Indiana: a Re-production of the original "History of Lawrence, Orange, and Washington Counties" 1884. (1985). Paoli, In: Orange County Genealogical Society.

Orange County historic sites and structures: an interim report of the Indiana Historic Sites and Structures Inventory. (2006). Indianapolis, In: Historic Landmarks Foundation of Indiana.

Powell, Richard L. (1961) *Caves of Indiana*. Bloomington: Indiana Department of Conservation. IGS Circular no. 8.

Nevers, George M. and Richard D. Walker. (1962). *Annotated Bibliography of Indiana Geology through 1955*. Indiana Geological Survey. IGS Bulletin no. 24.

Indiana Academy of Science. (1891-)
Indexes: Proceedings of the Indiana Academy of
Science. Indianapolis, IN: [Indiana Academy of
Science.] Vols. 1-50, 1891-50. 1 v.; v. 51-60, 1941-50,
in v. 61; v. 61-70, 1951-60, in v. 71; v. 71-80, 1961-70,
in v. 81; v. 81-90, 1971-80, in v. 91.

About the Authors

Lou Malcomb has served as Head of Government
Information, Maps, and Microforms since 1997
as well as Geosciences Librarian since 2007. She
is passionate about citizen access to information
produced by federal, state and local government.
She received her BA in Political Science and History
as well as her MLS from Indiana University-
Bloomington.

Richard L. Powell obtained A.B., 1959, and M.A.,
1961, degrees in Geography with minors in Geology
and Archaeology from Indiana University and Ph.D.
1976, in Geosciences from Purdue University. Dick
worked 15 years full time as a geologist in the Coal
Section of the Indiana Geological Survey, with one
year as Acting Section Head.

He worked about five years as an independent
consulting geologist, including part of a year on site
investigations for a nuclear power plant site in Iran
in 1978. He is Licensed Professional Geologist No.
3 in the State of Indiana. He is one of four partners
of a geological and ecological consulting firm,
Geosciences Research Associates, Bloomington,
Indiana, founded in 1979. Dick's work consisted
mostly of environmental monitoring related to coal
mining, evaluating unsanitary dumps, and part time
for 18 years as the karst expert for Region V of the
U.S. E.P.A. eight PCB dump sites in the Bloomington
area. He has compiled three reports for the National
Park Service related to the National Natural Landmark
Program. Dick was an avid spelunker for more than
25 years and author of "Caves of Indiana." Dick
phased out of work in the 1990's and started spending
summers in Montana and Wyoming for fly fishing and
geyser gazing. He was a volunteer for seven summers
as a thermal cleaner along all of the boardwalks in
the Upper and Lower Geyser Basins at Yellowstone
National Park. He is currently a summertime "geyser
gazer geezer."

He is interested in Indiana whetstone, which is from
Orange County, Indiana, that has been used as grave
markers. He is also a co-author of a yet unpublished
report for the Indiana Historical Society on the
distribution of whetstone markers in Indiana and
Illinois.

Richard L. Powell
rlpowell@indiana.edu