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OGS History Part 1: HOW IT BEGAN

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OKLAHOMA GEOLOGICAL SURVEY

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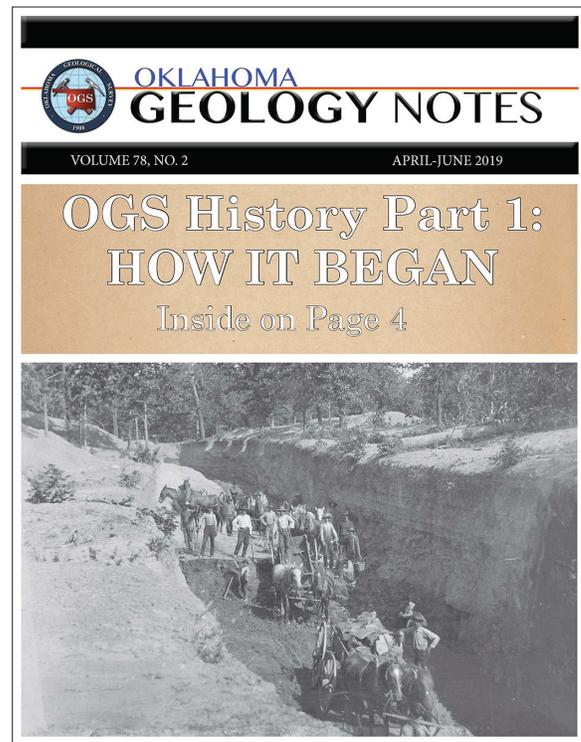
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The Oklahoma Geological Survey is a state agency for research and public service, mandated in the State Constitution to study Oklahoma's land, water, mineral and energy resources and to promote wise use and sound environmental practices.

IN THIS ISSUE

OGS begins series on its history.
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Loading coal in the strip pits at a coal mine in Wilburton, 1898. Photo from U.S. National Archives.

Dear readers,

A nationwide search continues for director of the OGS. As I mentioned last issue, this sort of complex search can take quite some time, and the time line is unclear about when a replacement will be named. We assure you, though, that once a new director is in place, we will announce it in this publication, likely in this very space.

This issue features Part 1 of our series on the OGS' history, and it begins well before the OGS was established. Oklahoma has a complex history, and the nature of that history influences our day-to-day lives even though we might not be aware of it. Part 1 will lay the groundwork for the eventual establishment of the Oklahoma Territorial Survey, which came before the establishment of the OGS.

As I mentioned last issue, please let me know if you would like to contribute to this project in any way.

Kind Regards,

Ted Satterfield
OGS Editor

OGS History Part 1: How It Began

By

Ted Satterfield

Editor, Oklahoma Geological Survey

One of the trickiest parts of writing a historical piece is deciding where to begin. Objectively, the Oklahoma Geological Survey was established in the summer of 1908, 8 months after Oklahoma was granted statehood. However, starting with the summer of 1908 might create the impression that nothing was going on before that time period. This has been a flaw in historical writing for centuries.

The decision of where to begin is especially tricky with a history as complex as Oklahoma's. In order for the formation of the Survey to make sense, and in order to understand the unique struggles of the Survey during the first few years after statehood, it's important to start as close to the beginning as possible.

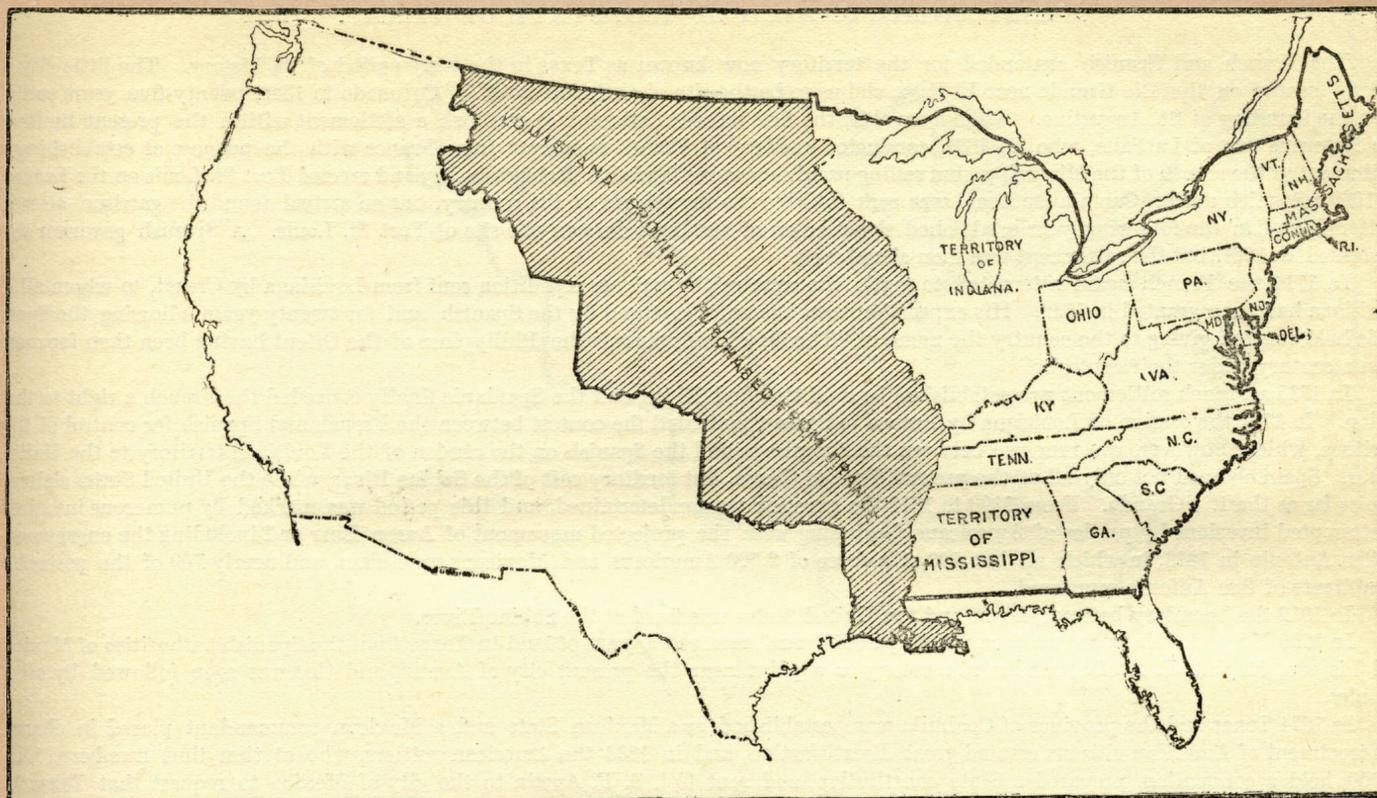
In this issue, we'll address the time prior to the establishment of the Oklahoma Territorial Survey, which was founded in 1898. It's important to note that the territorial survey only applied to the Oklahoma Territory (Western Oklahoma and the

Panhandle) but specifically did not apply to Indian Territory (eastern and parts of southern Oklahoma). The next installment in the series will begin with the formation of the Territorial Survey, but for now, let's go way back.

PREHISTORIC OKLAHOMA

Although it would be difficult to draw a connection between the establishment of the OGS and the indigenous people who occupied prehistoric Oklahoma, it's worth mentioning briefly because of what OGS research is doing to help us understand the lives of prehistoric inhabitants.

Tarver (2018) described the study of geological and geochemical characteristics of rock materials used by native cultures, some of whom date back tens of thousands of years ago. Uncovering the sources of these materials can shed light on characteristics of prehistoric Oklahoma's cultures, especially gathering and trading behavior and a view



This 1803 map of the United States highlights the land acquired in the Louisiana Purchase. From the Oklahoma State Digital Collections.

of technology evolution through time.

“Such artifacts, known as lithics, represent an important aspect of material culture that allow a glimpse into the lifeways of prehistoric humans; the choice of materials, treatment of the stone, and diversity of tool types are just a few aspects of lithic fabrication that provide clues for learning about how prehistoric North Americans lived” (Tarver, p. 4).

This article can be read on the OGS website at: <http://ou.edu/content/dam/ogs/documents/geologynotes/GN-V77N2.pdf>.

FRANCO-SPANISH ERA

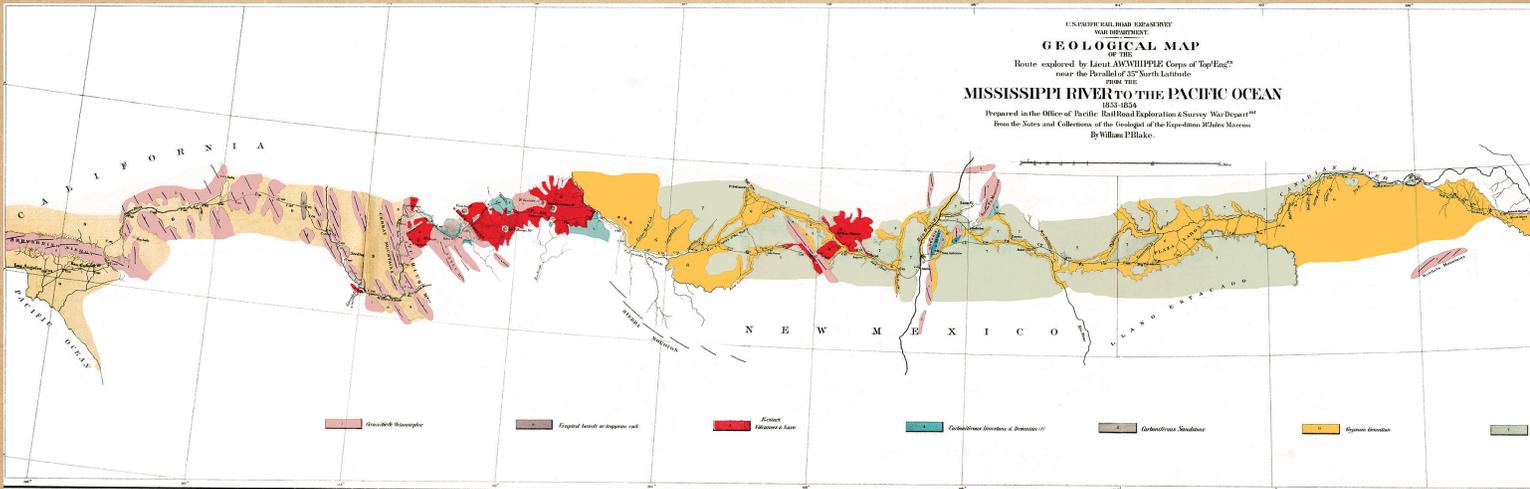
Prior to 1803, most of the land that is now Oklahoma was occupied by the French and was later sold to the United States as part of the Louisiana Purchase. The exception to this would be the panhandle, which was owned by the Spanish, Mexico, the Republic of Texas, and then removed from Texas when it was granted statehood. The northern border of the Texas Panhandle stretched beyond the parallel 36 degree and 30 minutes, and,

per the conditions of the Missouri Compromise of 1820, would have hindered Texas’ ability to be a slave state. Texas, therefore, forfeited this land to the U. S. government (Porter, 1942, p. 9). This strip of land would remain a Public Land Strip, or “No Man’s Land,” until it was eventually joined with Oklahoma Territory in 1890, officially making it Oklahoma’s Panhandle.

French and Spanish explorers thoroughly explored the land that would become Oklahoma, and made note of the natural resources in various diaries and reports. Notably, French explorer Bernard de la Harpe made note on September 2, 1719 while exploring the land that is now southeastern Oklahoma that “... we discovered many deposits abundant with coal” (Lewis, 1924, p. 342).

LOUISIANA PURCHASE

After the United States acquired the land that would be Oklahoma in 1803, Americans flowed west and discovered that French and Spanish lead-mining operations had already begun in Missouri. French and Spanish miners had located the lead and zinc de-



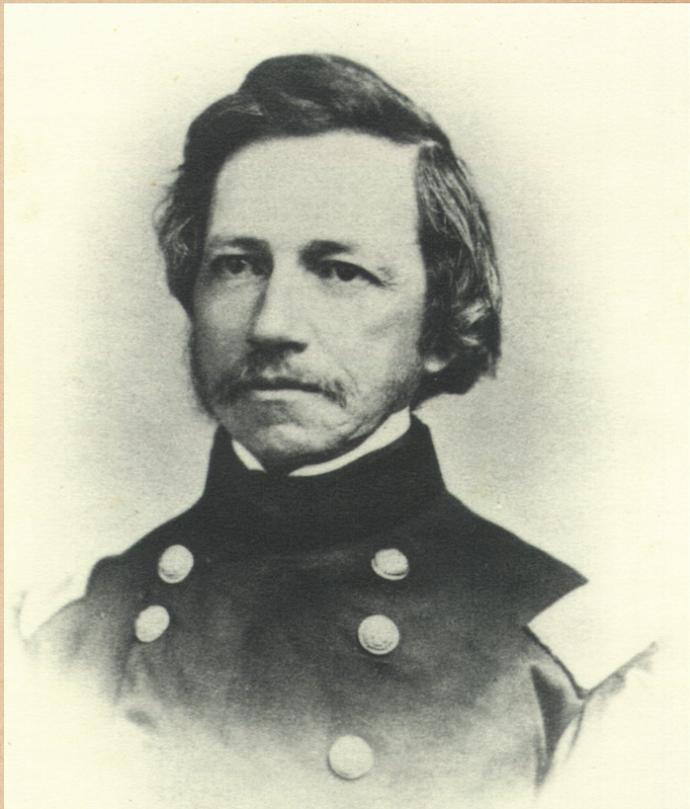
French geologist Jules Marcou's map drawn from notes taken during the Whipple expedition. Former OGS geologist Brittany Pritchett wrote about the origins of this map, as well as Charles Gould's 1904 geologic map of Oklahoma, in the Oklahoma Geology Notes in 2017. It can be found by following this link: <http://ogs.ou.edu/docs/geologynotes/GN-V76N2.pdf>.

posits in the Tri-State area of southwestern Missouri, southwestern Kansas and northeastern Oklahoma (Gibson, 1954, p. 21-23).

The land was eventually set aside as Indian Territory. President Andrew Jackson ordered the Five Civilized Tribes to be forcibly removed from the land they had inhabited in modern day Mississippi, Georgia and Florida, and moved to Indian Territory. The callused nature of this action, as well as the ways in which future Americans would grapple with this treatment, does in fact set the stage for a large portion of the complexity of future land development, political occurrences, and commercial resources development, all of which impacts the history of the OGS, as we'll see in upcoming issues of the Oklahoma Geology Notes.

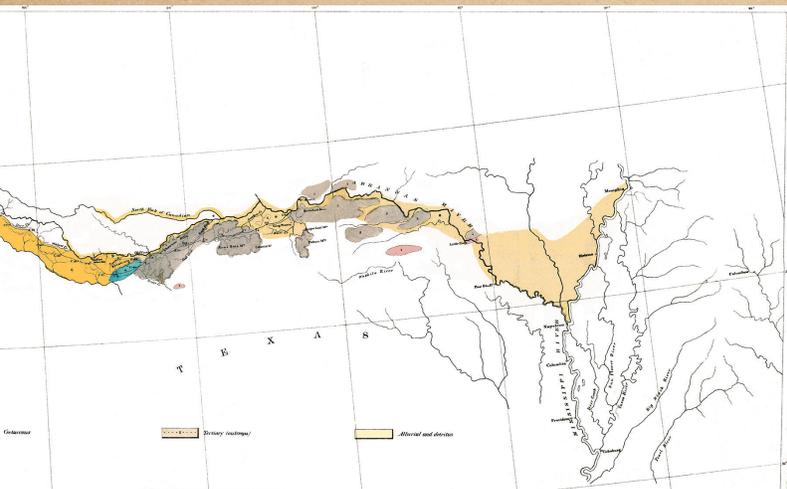
Toward the middle of the 19th Century, the U.S. Government sent multiple expeditions into Indian Territory. Some of the expeditions aimed to report on paths for building railroads, but others were geared toward expanding trade (Cutrer; Volpe). Regardless, they served as very informative for people back east who sought reliable information about these largely uninhabited lands.

Captain Randolph Barnes Marcy led his first expedition through Indian Territory in 1849 with the goal of establishing a safer trail for gold seek-



Amiel Weeks Whipple

ers heading west (Foreman, 1939, p. 117-120). In 1852 Marcy led an expedition in search of the source of the Red River. From May 2 until July 28, 1852, his party crossed previously unexplored Texas and Indian Territory and discovered the sources of both forks of the Red River. During the expedition Cap-



tain Marcy made note of numerous mineral deposits that could be exploited (Marcy, 1937, p. 40-43).

In July of 1853, U.S. Army Lt. Amiel Weeks Whipple led a wagon train of some 70 men, who slowly worked their way across Indian Territory, reaching the Texas border in September. Scientific observation was a major component of the Whipple expedition, whose specialists the Smithsonian Institution helped select (Volpe). The team of experts included noted European naturalists such as the French geologist Jules Marcou.

AFTER THE CIVIL WAR

The development of Indian Territory took some significant turns after the Civil War, when the U.S. government sought new treaties with the five tribes. Some tribes had fought on the side of the Confederacy, and the U.S. government used that to their advantage when negotiating these treaties. As a result of these 1866 treaties, two million acres in western Oklahoma no longer was attached to any tribe. The land remained this way for some time, but the message that this land wasn't assigned to anyone first came to the public's attention in February 1879, when a Washington D.C. railroad lobbyist named Elias C. Boudinot published an article on the subject in the Chicago Times (Hoig; Gittinger, 1939, 118-123).

The group of individuals who sought to force the U.S. government to allow white settlers into the unassigned lands were famously known as Boom-

OKLAHOMA

CAPT. PAYNE'S OKLAHOMA COLONY

Will move to and settle the Public Lands in the Indian Territory before the first day of December, 1880. Arrangements have been made with Railroads for

LOW RATES.

14,000,000 acres of the finest Agricultural and Grazing Lands in the world open for

FREE HOMES

For the people—these are the last desirable public lands remaining for settlement. Situated between the 34th and 38th degrees of latitude, at the foot of Washita Mountains, we have the finest climate in the world, an abundance of water, timber and stone. Springs gush from every hill. The grass is green the year round. No flies or mosquitoes.

The Best Stock Country on Earth.

The Government purchased these lands from the Indians in 1866. Hon. J. O. Broadhead, Judges Jno. M. Krum and J. W. Phillips were appointed a committee by the citizens of St. Louis, and their legal opinion asked regarding the right of settlement, and they, after a thorough research, report the lands subject under the existing laws to Homestead and Pre-emption settlement.

Some three thousand have already joined the colony and will soon move in a body to Oklahoma, taking with them Saw Mills, Printing Presses, and all things required to build up a prosperous community. Schools and churches will be at once established. The Colony has laid off a city on the North Fork of the Canadian River, which will be the Capital of the State. In less than twelve months the railroads that are now built to the Territory line will reach Oklahoma City. Other towns and cities will spring up, and there was never such an opportunity offered to enterprising men.

MINERALS!

Copper and Lead are known to exist in large quantities—the same vein that is worked at Joplin Mines runs through the Territory to the Washita Mountains, and it will be found to be the richest lead and copper district in the Union. The Washita Mountains are known to contain Gold and Silver. The Indians have brought in fine specimens to the Forts, but they have never allowed the white men to prospect them. Parties that have attempted it have never returned.

In the early spring a prospecting party will organize to go into these Mountains, and it is believed they will be found rich in GOLD AND SILVER, Lead and Copper.

The winters are short and never severe, and will not interfere with the operations of the Colony. Farm work commences here early in February, and it is best that we should get on the grounds as early as possible, as the winter can be spent in building, opening lands and preparing for spring.

For full information and circulars and the time of starting, rates, &c., address,

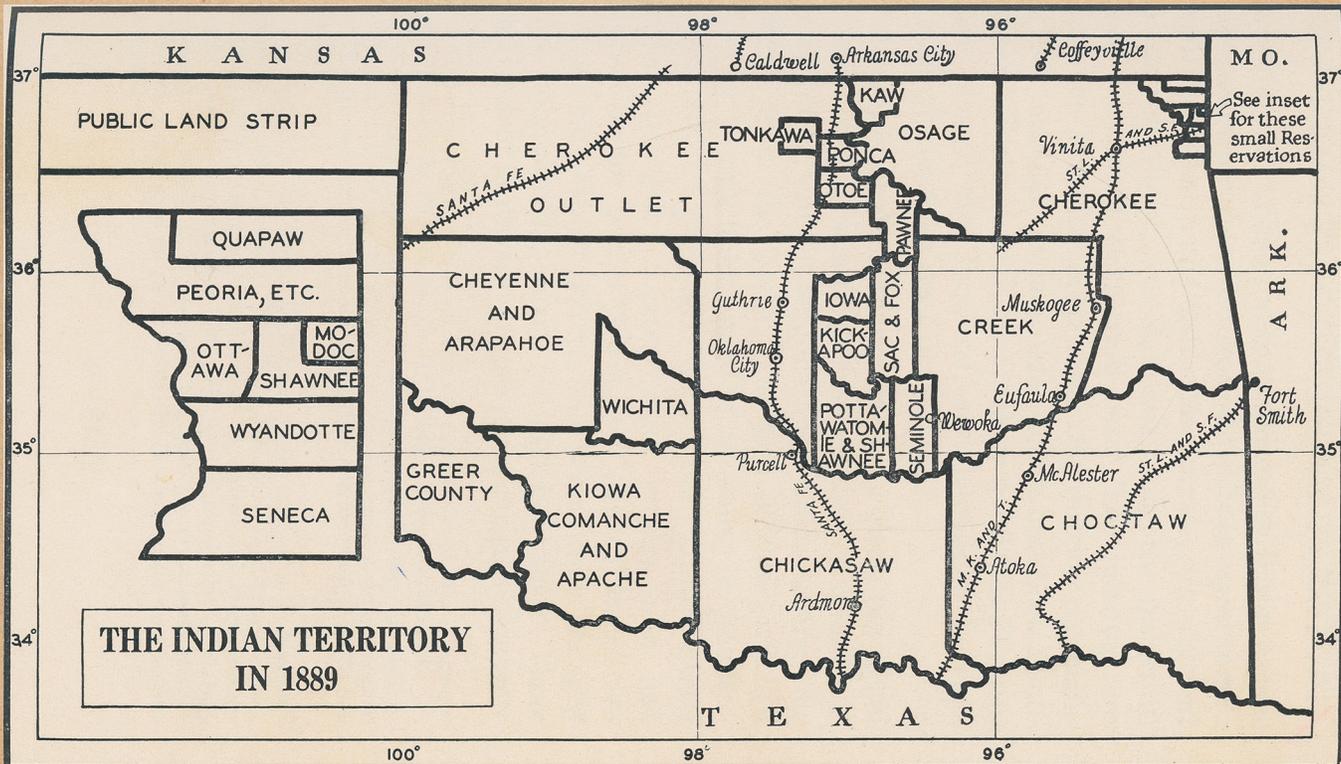
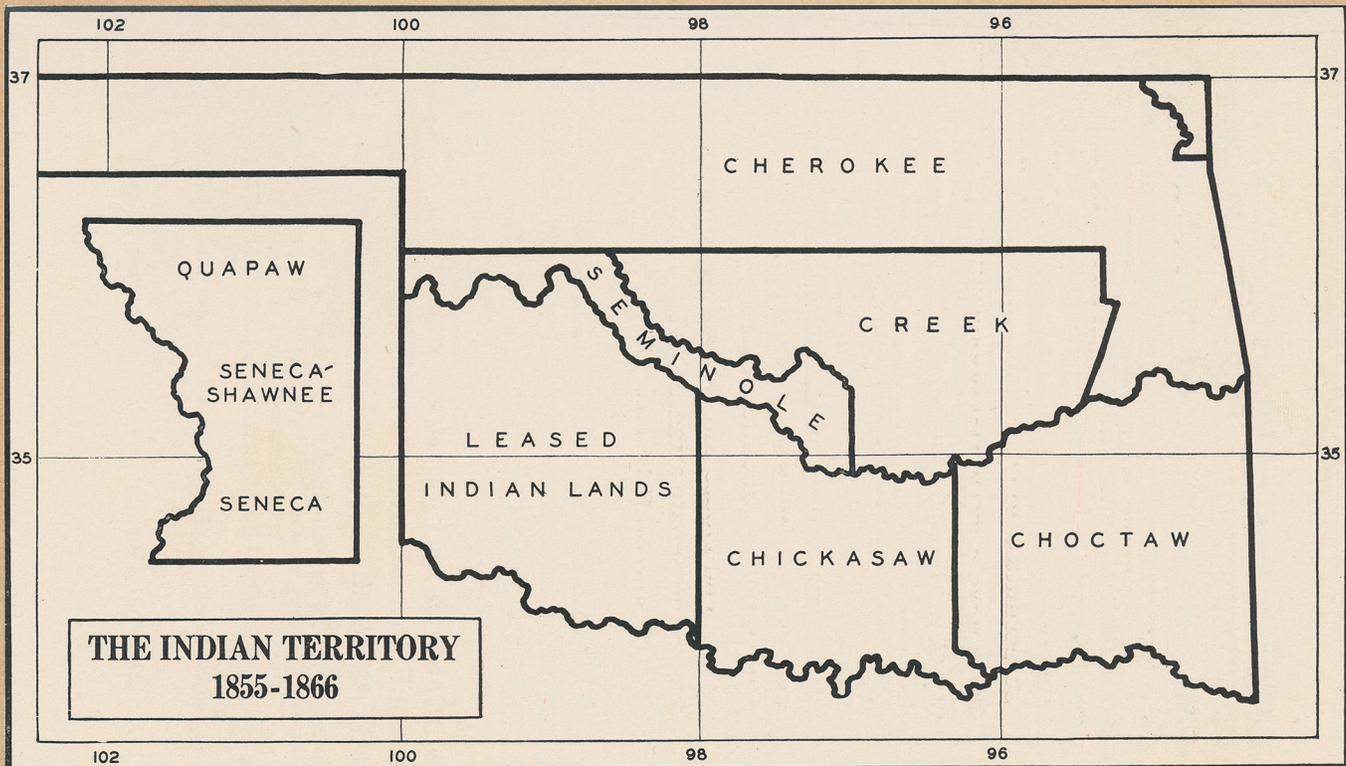
T. D. CRADDOCK,
General Manager,
Wichita, Kan.

GEO. M. JACKSON,
General Agent,
608 Chestnut St., St. Louis.

October 23d, 1880.

A Boomer poster promoting western Oklahoma. Courtesy of the Western History Collection.

OKLAHOMA GEOLOGICAL SURVEY



These maps show the changes that took place to Indian Territory between the end of the Civil War and the beginning of the Land Run of 1889. (Gittinger, p. 61, 187)



Lead and zinc mines near Peoria. Oklahoma Publishing Company Photography Collection, OHS.

ers.

Though a Cherokee citizen, Boudinot's status as a railroad lobbyist yields validity to the theory of some historians that the Boomer movement had been in some way coordinated by the railroad companies. At the time, multiple railroad companies had built tracks up to the borders of Indian Territory and were looking for a way for the land to be opened to settlement (Thompson, 1953, p. 48; Goble, 1980, p. 4).

MINING

As mentioned before, the French and Spanish explorers had dabbled in mining lead, but little had been done to expand upon their zinc and lead mining, especially in northeastern Oklahoma. Although some surface mining produced lead shot during the Civil War, the Oklahoma section remained commercially

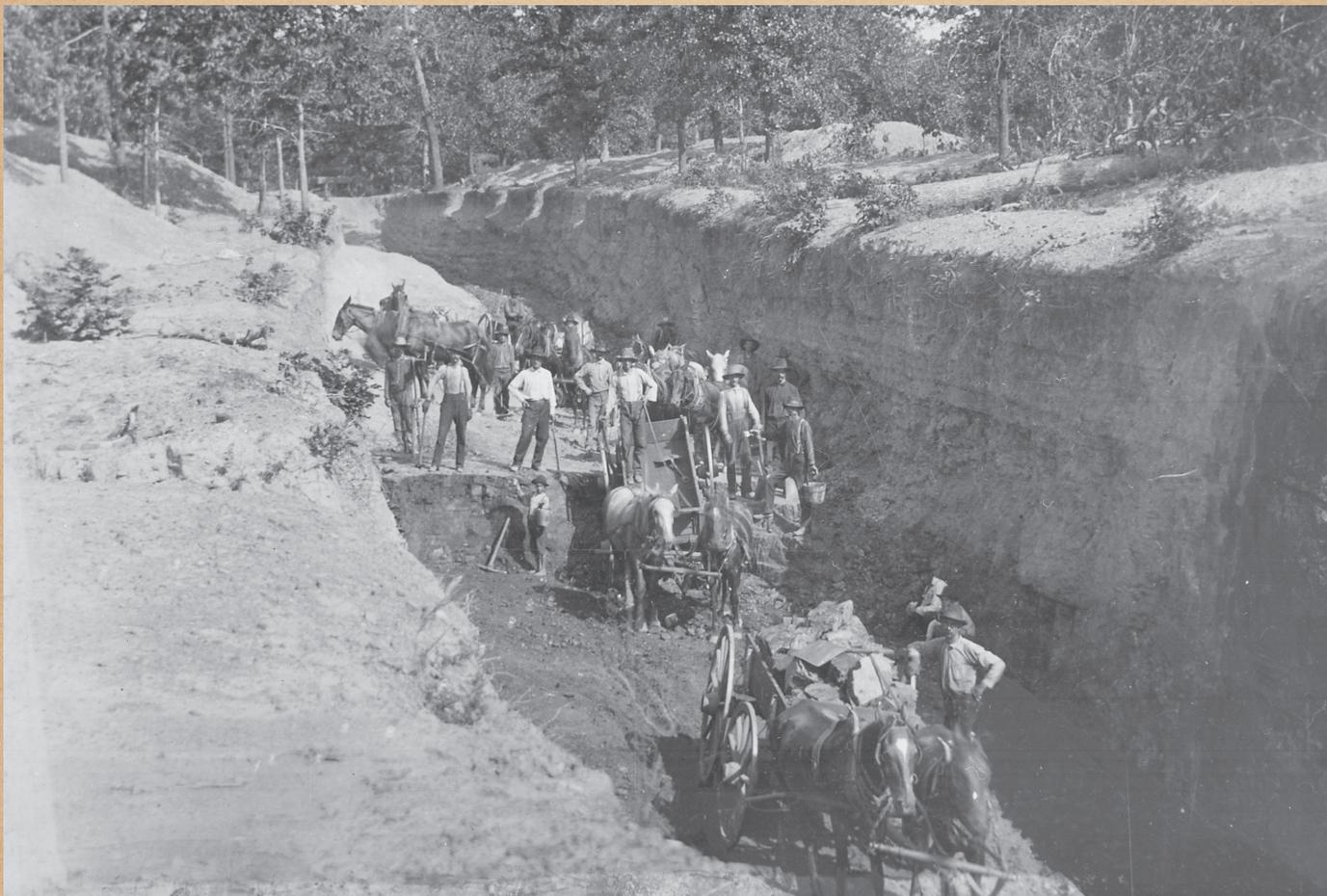
untapped until the Peoria Mining Land Company of New Jersey opened shafts around Peoria, Indian Territory in 1891 (Everett).



James J. McAlester

After statehood, Oklahoma would become known for its oil industry, but before that, coal was king (Gunning, 1975). As the mid-century expeditions had revealed, Indian Territory had large coal deposits, which were useful to locals, but weren't suited for commercial development. That is, until the expansion of railroads into Indian Territory (Aldrich, 1952, p. 50-53).

If the development of Oklahoma's coal-mining industry can be attributed to a single person, that person was James J. McAlester (Sewell, 2009). In 1872 McAlester married Rebecca Burney, a Chickasaw woman. This union brought McAlester full citizenship and rights



Loading coal in the strip pits at a coal mine in Wilburton, 1898. Photo from U.S. National Archives.

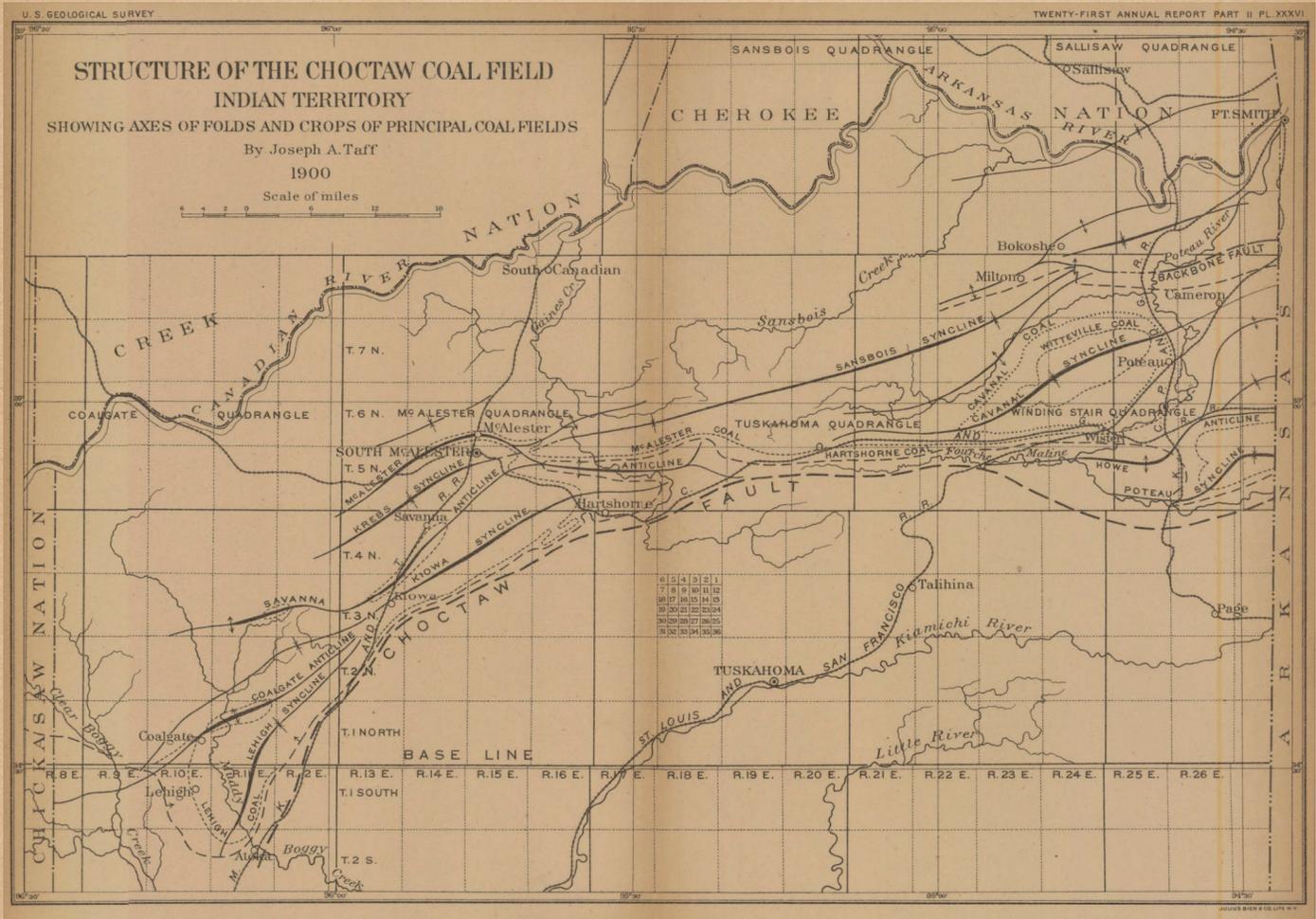
in both Choctaw and Chickasaw nations. His citizenship entitled him to stake a claim to coal deposits within a one-mile radius from point of discovery. Over time, as coal production in Indian Territory soared, McAlester's coal interests expanded. With the arrival of the Missouri, Kansas and Texas Railway, McAlester's wealth and reputation grew to an almost mythical status in the region (Sewell, 2009; Allen; Aldrich, 1952, 39-43).

In 1885, Edward D. Chadrick, a newspaper man from the Midwest, persuaded the Lehigh Valley Railroad to build a line that would tap the coalfields around Wilburton. The railroad company teamed up Chadrick with a well-known mining engineer, and they surveyed the land under the guise of a turkey hunt. Their instructions were to message back "hunting is good" or "hunting is bad" whenever they had determined whether building the line was in the railroad's best interest. The result was the construction of a sixty-seven-mile line between Wister and south McAlester that was completed in 1890. This road

permitted development of the coalfields at Wilburton, Alderson, and Hartshorne (Aldrich, 1952, p. 57; Sewell, 2009).

Chief Coleman Cole of the Choctaw Nation set out to see that the Choctaw Nation received something out of the coal and that the mineral wealth did not go into the hands of just a few men (Aldrich, 1952, 41-43). At first he shut down all mining operations until an agreement could be reached. The disputes eventually ended up including the Chickasaw Nation and was eventually resolved in 1883. Under these agreements, the individual who founded a mine was the owner, but they were required to pay royalties to the Choctaw Nation. After these agreements were made, other companies grew interested in coal mining in Indian Territory, especially in the Choctaw Nation.

The Dawes Act brought about another phase in the development of Indian Country. The aim was to allow for the allotment of Native American lands



USGS Map of the Choctaw Coal Field in 1900.

to individuals, instead of the Nations within Indian Territory (Gittinger, 1939, p. 169-170). The plan was to also move toward the removal of native governments, as Oklahoma worked its way toward statehood. At the time of this writing, the United States Supreme Court case of *Carpenter v. Murphy* is weighing whether the Nations within Indian Territory were ever officially abolished, a step some argue

was skipped in the rush toward statehood.

In the next installment of this series, we'll see the establishment of the Oklahoma Territory Survey, and the arrival of the man who would become known as the "Father of Oklahoma Geology": Charles Gould.

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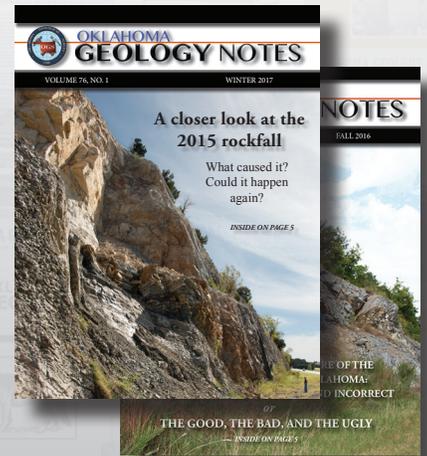
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About the Author

Ted Satterfield became the OGS Editor in August 2015. A native Oklahoman, Ted has a diverse professional background. After receiving his master's in the Gaylord College at OU, he spent two years as a newspaper editor before switching to an academic career. For six years he was a mass communication faculty member at Northwestern Oklahoma State University, where he taught Intro to Mass communication, Photography, News Editing, and Media Convergence. He also acted as advisor to the student-media website. Ted is also an accomplished screenwriter and director, winning numerous awards, including the best short screenplay at the 2012 deadCENTER Film Festival. He and his wife, Melanie, co-wrote the stage play "Alcohololidays," which was produced in Oklahoma City in 2013, and ran through December 2015 at the Oklahoma City Civic Center. Ted is an active member of the Association of Earth Science Editors.



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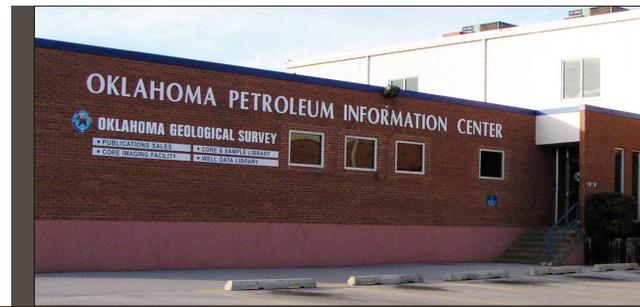
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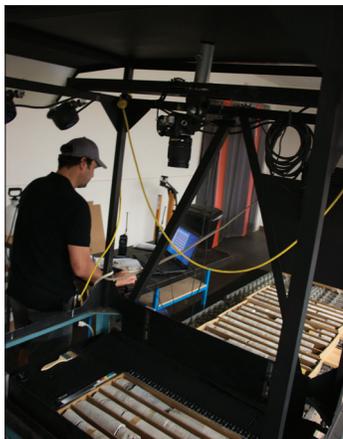
The Oklahoma Geological Survey's Oklahoma Petroleum Information Center (OPIC) is a 192,916 square-foot facility that houses approximately 500,000 boxes of core and cuttings from Oklahoma and elsewhere; an extensive repository of Oklahoma petroleum data; and the Geological Survey's publication sales office.

The OPIC facility is open Monday through Friday from 8AM to 5PM.

Core and Sample Facility

As Oklahoma seeks to maximize the recovery of oil and gas from new, existing, and shut-in wells, these data resources play an ever more important role.

In addition to being a valuable source of information for hydrocarbon exploration and production activities, OPIC's collections are used in many other ways. In particular, the use and



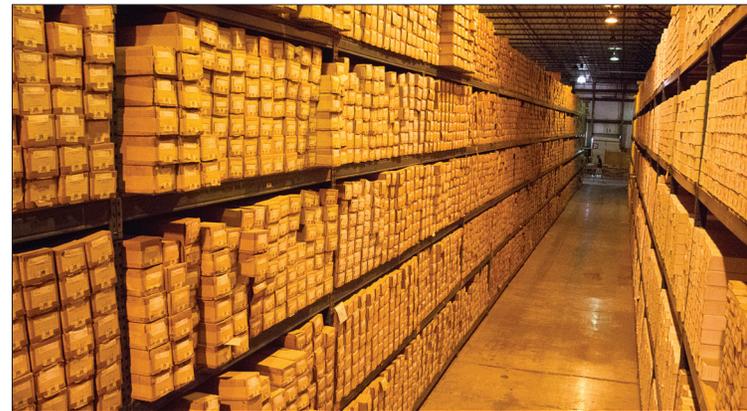
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appreciation of these materials is increasing because they are a major resource for groundwater studies, land-use change analyses, CO₂ sequestration research, archaeological investigation, and environmental studies.

Well Data Library

The OGS Well Data Library is the State's official repository for full-scale (5 inches to 100 feet) paper logs from more than 450,000 wells, with new logs added daily. In addition to hard copy logs, a backup collection of logs is available on microfiche as well.

Also in the collection are 126,000 strip logs dating from the 1890s which have been recently digitized. In addition, the library maintains a hard copy of 1002A completion reports from 1904 to the 1990s; multiple sets of scout tickets; completion cards for Oklahoma wells; and hard copies of



aerial photos dating from 1934-1986 that are filed by county, township and range.

Publication Sales Office

The OGS Publication Sales Office is also located at OPIC. There you can purchase any USGS 7.5 minute quadrangle map of the state, a variety of other USGS maps and all inprint maps and publications produced by the OGS, representing nearly a century's worth of research and mapping.

OGS publications are used by hikers, campers, hunters, school and scout groups, those who enjoy outdoor activities. We have a resource room especially for K-12 teachers, which provides free access to rocks, minerals, fossils, and curricula for classroom use. OPIC is a resource for public officials planning highways and facilities, as well as those engaged in urban planning, water development, alternative energy, and other projects for economic development and civic improvement.



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Oklahoma Enhanced Oil Recovery (EOR) Technical and Core Workshop

TECHNICAL SESSION (Thursday, November 14, 2019)

Purpose: The Oklahoma Geological Survey (OGS) is developing a Technical Session and Core Workshop on enhanced oil recovery (EOR) with an emphasis on mostly tight sandstones, in particular, the Hoxbar Group of rocks in the southern Oklahoma and STACK/SCOOP/Merge areas in the Anadarko Basin of Oklahoma. The Pennsylvanian (Missourian) Hoxbar Group is economically important to the Oklahoma petroleum industry. In the Anadarko Basin the Hoxbar Group (e.g., Marchand sandstone) has been a prolific producer of oil and gas. Technical and engineering presentations will include sedimentology, reservoir quality, sequence stratigraphy, geochemistry, geomechanical rock properties and integrated depositional and diagenetic evaluation of the tight sandstones applied to EOR. Reservoir heterogeneity and mineralogy (as related to petrophysics) are important components used to evaluate EOR. The workshop is focused on the key learnings from both operators and researchers on tight sandstones and associated shales directly relating to EOR practices. The results of this work can be applied to other tight sandstones as an analog worldwide. The OGS is soliciting both sponsorships and presentations for this workshop.

Where: Moore Norman Technology Center - South Penn Campus, Oklahoma City, Oklahoma



CORE WORKSHOP (Friday, November 15, 2019)

Purpose: A half-day core workshop at the Oklahoma Petroleum Information Center (OPIC) will present cores from several key wells of the Hoxbar Group of rocks from Caddo, Grady, Stephens and Carter Counties. The Hoxbar cores (Medrano, Marchand, Culp Melton, and Cottage Grove Sandstones, Oolitic carbonate and the associated mudstones) will be viewed to compare the lithofacies changes regionally to examine their characteristics, and to see how the lithofacies (lithology) correlate to well logs.

Where: Oklahoma Petroleum Information Center, Norman, Oklahoma



Technical Program Registration (Thursday 11/14/19)

Before October 11 (early-bird): \$200
Beginning October 12 (normal): \$300
Students: \$75

Core Workshop Registration (add-on only, Friday 11/15/19)

\$75 (limited seats available)

For further information about presentations, please contact Dr. Abbas Seyedolali (abseyed@ou.edu) or Mr. Ming Suriamin (huangcienming-1@ou.edu, 405-325-4437).

For further information about registration, sponsorship, or exhibit spaces, please contact Dr. Molly Yunker (yunker@ou.edu, 405-325-7313).



Oklahoma Geological Survey

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Looking Down the Road

Coming up next in *The Oklahoma Geology Notes*

OGS History Installment No. 2

Before there was an OGS, there was an Oklahoma Territorial Survey. In the next installment of the OGS history series, we'll see the establishment of the Territorial Survey, as well as the arrival of Charles Gould, who would come to be known as the Father of Oklahoma Geology.

