



OKLAHOMA GEOLOGY NOTES

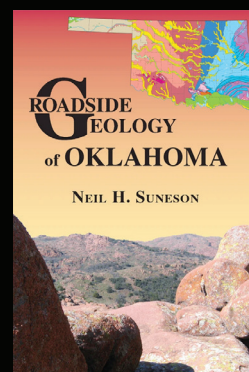
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Roadside Geology in Oklahoma
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OKLAHOMA GEOLOGICAL SURVEY

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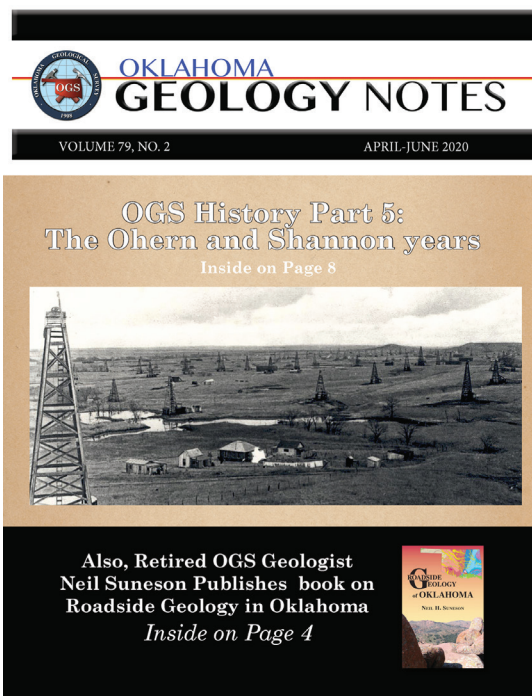
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Cover design by Ted Satterfield.

Dear readers,

The Oklahoma Geological Survey has been working from a distance. In Mid-March the University of Oklahoma temporarily closed its campus due to the Covid-19 crisis. We initially knew we would all be working from home a few weeks into April, but those few weeks have now stretched into months. At the time of this writing, it is unclear when we'll be able to return to normal.

It's been a challenging time, but we have managed to adapt to working from home and staying in touch via Zoom meetings and phone calls. We are just as busy, if not busier, than normal in our new working conditions, but we are eager to return to Sarkeys Energy Center or OPIC as soon as we safely can.

As mentioned in the previous issue of the Oklahoma Geology Notes, the OGS has named a new director: Dr. Nicholas Hayman. He officially starts work on July 1, and quite possibly will begin his tenure as the 9th director of the OGS while working from home.

Kind Regards,

Ted Satterfield
OGS Editor

Retired OGS geologist Neil Suneson publishes book on Roadside Geology of Oklahoma

Earlier this year, retired OGS geologist Dr. Neil Suneson published a long-awaited book “Roadside Geology of Oklahoma.” Suneson spent 5 ½ years on the project, which is an addition to the long-running Roadside Geology series published by Mountain Press Publishing Company of Missoula, Montana.

Even though it was a tremendous amount of work, Suneson is very pleased with the outcome.

“Most of the time it was a labor of love,” Suneson said. “At other times it was only a labor.”

Suneson had long been a fan of the Roadside Geology series and thought that he would enjoy writing an Oklahoma version. Around 20 years ago, he approached a Mountain Press representative at a geology conference and inquired about whether anyone was working on an Oklahoma addition to the series. He was disappointed to learn that, at the time, two geologists from Texas had taken on the writing project.

Several years later, the Oklahoma version of the book series never materialized, so he once again asked Mountain Press representa-



Retired OGS geologist Neil Suneson

tives about the status of the book, and this time learned that the project had fallen through with the other writers. He offered his services, and he began work shortly after.

Suneson said to prepare for the book, he decided to arm himself with multiple copies of maps from the StateMap program and then proceeded to drive across the state, looking around for interesting outcrops as he drove. Even though he'd worked as a geologist in Oklahoma for decades, he was surprised with how much he could see along the roads, and at times, how much he didn't see.

“The most notable section of road not included in the book is the Muskogee Turnpike,” Suneson said, adding that there aren’t any interesting outcrops found along the way.

He wound up accumulating so much content that the book wound up longer than what Mountain Press initially wanted.

Though Suneson has written numerous manuscripts over the years, he found this project uniquely difficult, since, even though it’s a book about geology, it’s aimed at a general audience.

“You can’t use scientific terms,” he said. “That was one of the biggest struggles. How do you get across scientific concepts, and what geologists know, across to the public accurately in a language that they know? It’s really hard to do.”

Neil said his editor, Jennifer Carey, was very helpful in this regard, and even though located at other ends of the country, they established an excellent working relationship.

“I’d love to meet her someday,” Neil said, about the book’s editor.

Neil had assistance from other OGS staff as he worked on the project. Retired cartographer Jim Anderson and current cartographer Russell Standridge, just to name a few, as many more are included in his acknowledgement section of the book.

Although he is “thrilled” with the entire book, Neil said he’s especially excited about a few key sections.

“I think a lot of people will enjoy the areas on I-35 over the Arbuckles,” he said. “I spent a fair amount of time talking about it. A lot of people drive over that area on I-35 and people

see that and wonder. I think I do a pretty good job of describing exactly what you see and why things are the way they are.”

He also added that he thinks readers will learn some interesting aspects about unexpected parts of the state.

“The thing that’s probably going to attract the most attention are the chapters on the metro areas,” he said. “There’s not a lot of geology to see in

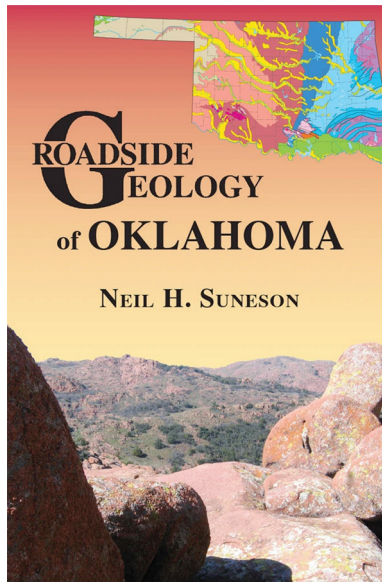
Oklahoma City or Tulsa, but there are museums and other attractions to see. People who live in the metro areas ought to know there is some pretty cool historical geology to be seen in their areas.”

In the preface of the book, Suneson explains how he was unimpressed the first time he drove across Oklahoma in 1975, but how he now knows that he would have been impressed if he could have seen all that the state has to offer.

“I think a lot of people who don’t know Oklahoma very well will be surprised at how varied it is,” he said.

But he also hopes that Oklahomans will get a copy of the book and learn exciting things about their state.

“Get outside and enjoy the state,” he said. “There are a lot of cool things to be seen.”



OGS History Part 5: The Ohern and Shannon years

By

Ted Satterfield

Editor, Oklahoma Geological Survey

In October 1911, Charles Gould left the Oklahoma Geological Survey, leaving very big shoes to fill. He was replaced by D.W. Ohern, who had been heading up the Geology Department at the University of Oklahoma since Gould left that position to become the OGS director. Gould and Ohern met at Johns Hopkins University in 1905 during Gould's leave of absence to complete his doctorate and network at various universities in the eastern United States. When Ohern completed his doctorate in 1908, he came to Oklahoma to lead a field party and to teach in the OU Department of Geology (Ham, 1983, p. 11).

Not much has been written about Ohern's time as director of the Survey. This is perhaps because the period of time he served as director was relatively short (just over two years), but also because what occurred during that time period was more or less a continuance of what Gould had set in place during his first term as director. Projects carried forward during this time included investigations of oil and gas, coal, glass sand,



The second OGS director, D. W. Ohern

building stone, gypsum and salt, lead and zinc, portland-cement materials, rock asphalt, road materials, the geology and mineral resources of the Wichitas and Arbuckles, the red beds, the Neva Limestone, vertebrate-fossil beds, volcanic dust, and the geology of east-central Oklahoma (Ham, 1983, p. 11).

In Gould's unpublished manuscript on the history of geologic work in Oklahoma, he only notes two key occurrences during the Ohern years: 1) Ohern successfully lobbied the state legislature to increase OGS funding, and 2) The oil industry was beginning

to employ geologists to assist in locating drilling sites, looking to science instead of hunches about where to drill for oil, which lead to numerous OGS researchers leaving for more lucrative opportunities in the oil industry. Before this time period, "Oil was found by guess and by God, by instinct, by smell, by a feeling in the bones, by doodlebuggers, by luck, or by unidentified skill — not by identifying structural or stratigraphic traps, not by geologists" (Ham, 1983, p. 9).

In 1914, Ohern left the OGS to enter the oil business himself. Ohern joined with OGS chemist Frank C. Buttram, as well as other oilmen, to form Fortuna Oil Company. Both Ohern and Buttram became very wealthy in

the industry (Ham, 1983, p. 11).

Ohern recommended he be replaced with OGS field geologist, Charles Shannon. Shannon came to Norman to work for the OGS as a field geologist in September 1911, just before Gould's resignation. His academic training was in general science. He received an A.B. in 1906 and an A.M. in 1907 from Indiana University. He was a high school science teacher in Brazil, Indiana after receiving his degrees. In her 1983 manuscript on OGS history, Elizabeth Ham says it was Shannon's broad science background that accounted for the Survey's non-geologic publications, such as "Trees and Shrubs of Oklahoma" and "Plant Life in Oklahoma" that appeared during this era (Ham, 1983, p. 11-12).



The third OGS director,
Charles Shannon

Shannon's years as OGS director were during extraordinarily tumultuous years in the United States and in the state of Oklahoma. The era included a world war, a global pandemic, and intense racial violence and unrest, just to name

a few reasons. But the years, marked an exceptionally prosperous and peaceful time at the Survey and at the university. Shannon's era would end during another chaotic time period, but we'll get to that later in a few pages.



OU's third president
Stratton Brooks

Between 1908 and 1912, two OU presidents, and numerous faculty members, had been fired for political reasons in a very short period of time. This led to the university gaining a terrible reputation nationally, and made it difficult to find suitable candidates willing to consider the position of university



View of the Glenn Pool near Tulsa in the early 1920s.

president. A decision was made to find a candidate who was completely unknown in the state of Oklahoma in the hopes this would help prevent political influence at the university. After turning down the position once, superintendent of Boston Schools, Stratton Brooks, was eventually persuaded to accept the position, in part due to his past success of eliminating political influence in Boston schools. Under Brooks' leadership, student enrollment exploded, numerous top-notch faculty members were added, and the university constructed several buildings that remain on campus today (Harp, 2015, p. 27-38).

The Brook's era worked out well for the

OGS, too. The OGS saw its budgets increase steadily and the perpetual problem of not having consistent and adequate housing for the Survey on campus was eventually fixed in 1919 with the construction of the Geology Department building, which provided the Survey's first permanent home (Ham, 1983, p. 18).

The biggest problem the Survey had during this era appears to be keeping researchers, as many understandably saw far more lucrative opportunities in the booming oil industry, which, as was mentioned earlier, was just beginning to look for geologists' advice on where they were more likely to strike oil.

Despite the increased appropriations for the Survey, around 1920 OGS director Charles Shannon began generating additional revenue from a source that would cause the Survey problems a few years later, and certainly played a role in the relatively smooth era at the Survey coming to a screeching halt. During this era well logs were submitted by industry to the Oklahoma Corporation Commission, and were kept at the state capitol building. Even though the Survey wasn't the keeper of these well logs, OGS staff were frequently asked to provide copies of the well logs to interested individuals or companies. Shannon claims he requested permission to open an office in the Capitol building in Oklahoma City for the specific purpose of making copies of well logs and selling them to individuals or companies to generate additional revenue for the Survey. This practice would continue until January 1923, when the state would audit the Survey, suspecting Shannon of pocketing the revenue generated from copies. The suspicion of Shannon's conduct wasn't helped by the fact that he had opened a personal bank account to deposit checks written for well log copies. He took out personal loans which he used for Survey expenses, but then reimbursed himself to pay off the personal loans. Shannon admitted that this was his practice in an article in the *Oklahoman* to defend himself against allegations of embezzlement. Once the audit was conducted, investigators found that Shannon had not pocketed any of the money generated from well log copies, but the Survey did put a stop to the practice, which was picked up by staff of the Oklahoma Corporation Commission (*Oklahoman*, 1923, p. 5).

This investigation into the Survey's finances was personally requested in January 1923 by Governor John Calloway Walton, just a few weeks after he was sworn in. The



Oklahoma's Governor John "Jack" Walton

new governor would stir up lots of trouble for the OGS as well as for OU. The reasons for his animosity toward the OGS and the university is something that historians have widely speculated about. A few outspoken faculty members did publicly back Walton's opponent during the election, which was likely part of the reason. He also had powerful labor and farming groups backing him, and some of these forces viewed higher education as both condescending and wasteful. Regardless, Walton managed to push out OU President Stratton Brooks, unseat several members of OU's Board of Regents, and in April of 1923, he vetoed all appropriations for the Oklahoma Geological Survey.

Walton never provided a clear answer for why he effectively shut down the OGS, but he was attempting to eliminate a fourth of OU's

salary budget, which was immediately hit with legal challenges. Vetoing the OGS budget was roughly the same amount of money, so it's possible he saw this as a way to eliminate university funding without having to face any legal challenges.

Gould says in his book *Covered Wagon Geologist* that Walton saw the Survey as irrelevant once the Oklahoma Corporation Commission had taken over the task of copying well logs. Most historians don't

appear to echo the reason Gould provides, opting for vague reasons having more to do with the OGS's ties to the university. No matter his motivation for doing so, the Survey was forced to close up shop at the end of the fiscal year in June of 1923.

In the next entry in this series, we'll discuss what happened during the time the Survey was shut down and what events eventually led to its return.

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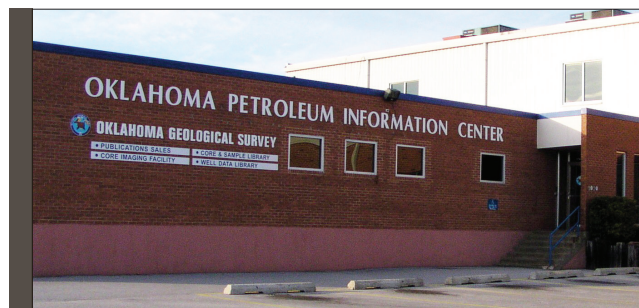
About the Author

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.





OKLAHOMA PETROLEUM INFORMATION CENTER



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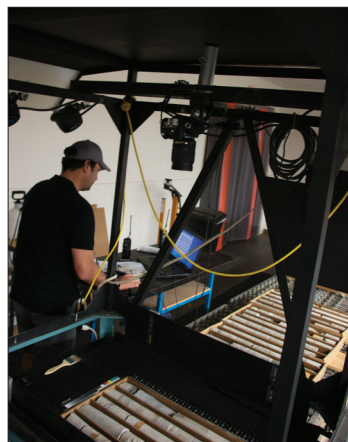
The Oklahoma Geological Survey's Oklahoma Petroleum Information Center (OPIC) is a 192,916 square-foot facility that houses approximately 500,000 boxes of core and cuttings from Oklahoma and elsewhere; an extensive repository of Oklahoma petroleum data; and the Geological Survey's publication sales office.

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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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Looking Down the Road

Coming up next in *The Oklahoma Geology Notes*

OGS History Series Part 6: The Return of the OGS ... And Gould

The OGS was forced to close up shop in 1923, but after just a few months, a series of extraordinary events would unfold, resulting in the fast return for the Survey ... and an unexpected return of none other than Charles Gould.

