

The First Reports of Oil in Oklahoma*

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Abstract

One hundred-fifty years ago, when the 1859 Drake well in Pennsylvania provided the spark that launched the modern petroleum industry, Oklahoma already had oil production from a hand dug well in Mayes County, and at least ten publications had mentioned oil seeps in southern Oklahoma. By the time Oklahoma became a state and a major oil producer in the early 20th century, these reports had been largely forgotten, and have been overlooked in the modern geological literature. The Dragoon Expedition (Wheelock 1834) first reported rock oil in Oklahoma at seeps probably located near the Loco and Healdton oil fields. Lt. Johnston of Fort Washita next reported a steeply dipping sandstone seeping oil in the northern Arbuckle Mountains at an 1845 geological convention. Lt. Johnston's report was summarized in multiple commercial books related to coal and oil from 1848 to 1865. Chickasaw Indian Agents stated in several annual reports (Upshaw 1845; 1846; 1848; Smith, 1853) that two or more oil springs in southern Oklahoma were used by the local population for medicinal purposes. Michler (1850) mentioned these medicinal springs in a military expedition report and showed *Oil Spring road* leading west from Fort Washita on what is probably the first published map to depict oil in Oklahoma. Randolph Marcy, returning from his 1852 expedition to find the source of the Red River, traveled through the Wichita Mountains to the area of future Fort Sill and found oil within igneous outcrops in the immediate vicinity of Medicine Bluffs.

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The First Reports of Oil in Oklahoma

Raymond P. Sorenson

Originally presented at the 2009 AAPG Midcontinent Section in Tulsa.

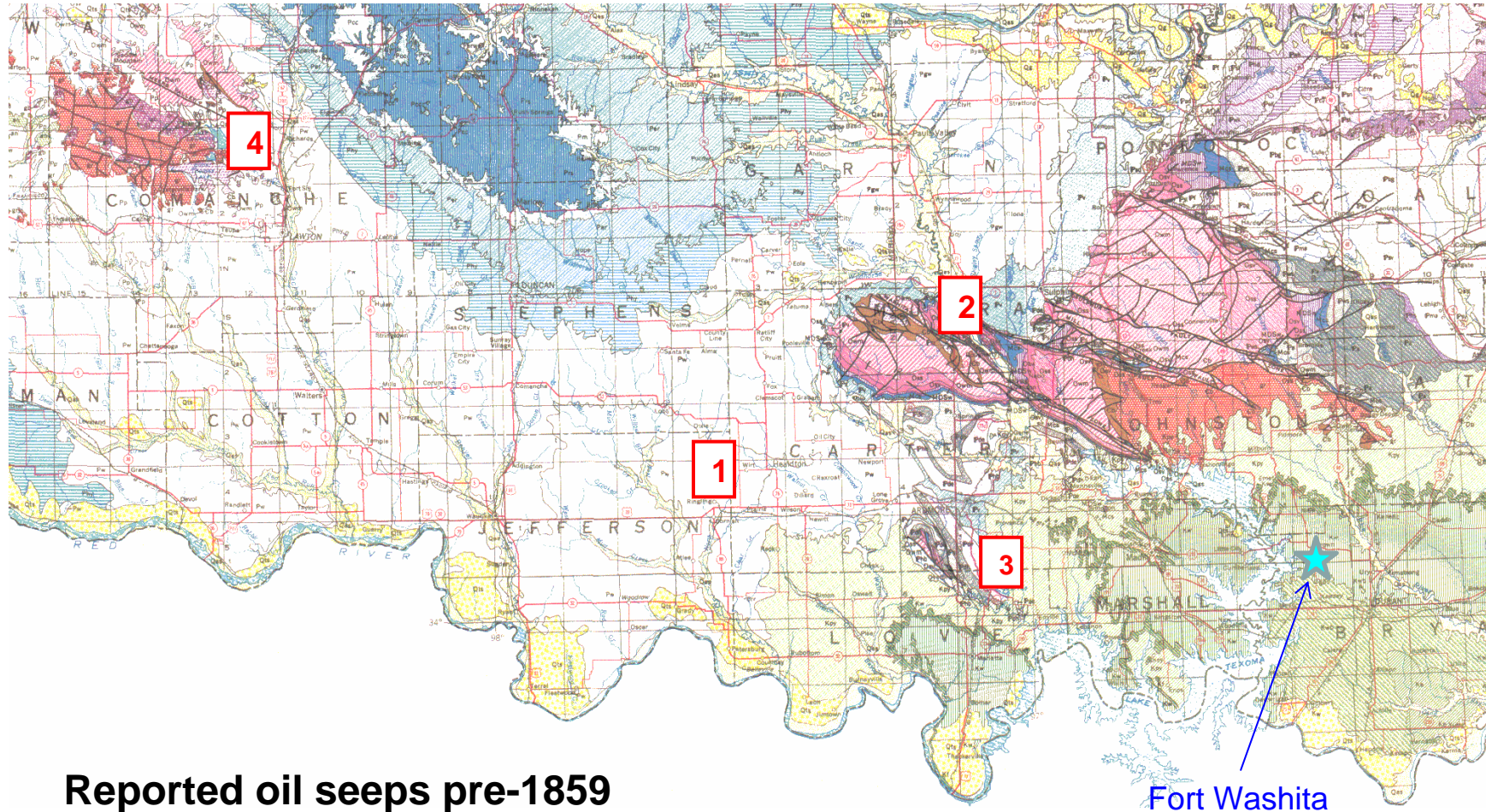
A more in-depth historical account can be found at:

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Abstract

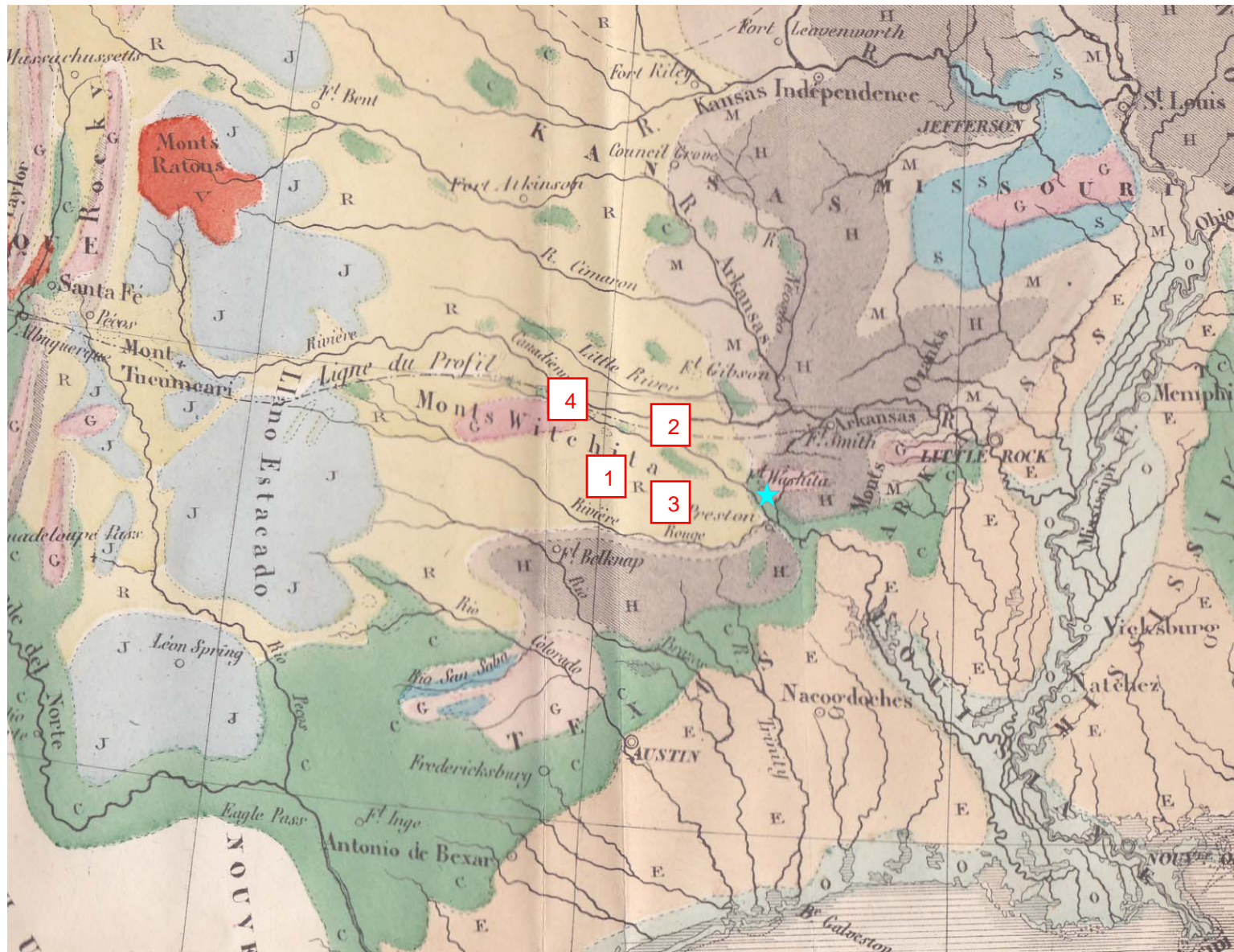
150 years ago, when the 1859 Drake well in Pennsylvania provided the spark that launched the modern petroleum industry, Oklahoma already had oil production from a hand dug well in Mayes County, and at least ten publications had mentioned oil seeps in southern Oklahoma. By the time Oklahoma became a state and a major oil producer in the early 20th century, these reports had been largely forgotten, and have been overlooked in the modern geological literature. The Dragoon Expedition (Wheelock 1834) first reported rock oil in Oklahoma at seeps probably located near the Loco and Healdton oil fields. Lt. Johnston of Fort Washita next reported a steeply dipping sandstone seeping oil in the northern Arbuckle Mountains at an 1845 geological convention. Lt. Johnston's report was summarized in multiple commercial books related to coal and oil from 1848 to 1865. Chickasaw Indian Agents stated in several annual reports (Upshaw 1845; 1846; 1848; Smith, 1853) that two or more oil springs in southern Oklahoma were used by the local population for medicinal purposes. Michler (1850) mentioned these medicinal springs in a military expedition report and showed *Oil Spring road* leading west from Fort Washita on what is probably the first published map to depict oil in Oklahoma. Randolph Marcy, returning from his 1852 expedition to find the source of the Red River, traveled through the Wichita Mountains to the area of future Fort Sill and found oil within igneous outcrops in the immediate vicinity of Medicine Bluffs.

The First Reports of Oil in Oklahoma



Geologic map of a portion of southern Oklahoma,
(Ham, 1954)

Mid-Continent Geology at the time of the 1859 Drake well



(Marcou, 1855)

The First Reports of Oil in Oklahoma

By 1859, when the Drake well in Pennsylvania provided the spark that launched the modern petroleum industry, at least 10 nationally distributed publications had mentioned oil in Oklahoma. None of these has been cited in the modern petroleum geology literature.

- 3 military expedition reports
 - Wheelock (1834), Michler (1850), Marcy (1854)
- 1 presentation at a major scientific conference
 - Johnston (1845)
- 4 Annual reports of Chickasaw Indian Agents
 - Upshaw (1845, 1846, 1848), Smith (1853)
- 2 editions of a commercial reference book on coal
 - Taylor (1848; 1855)

The 1834 Dragoon Expedition

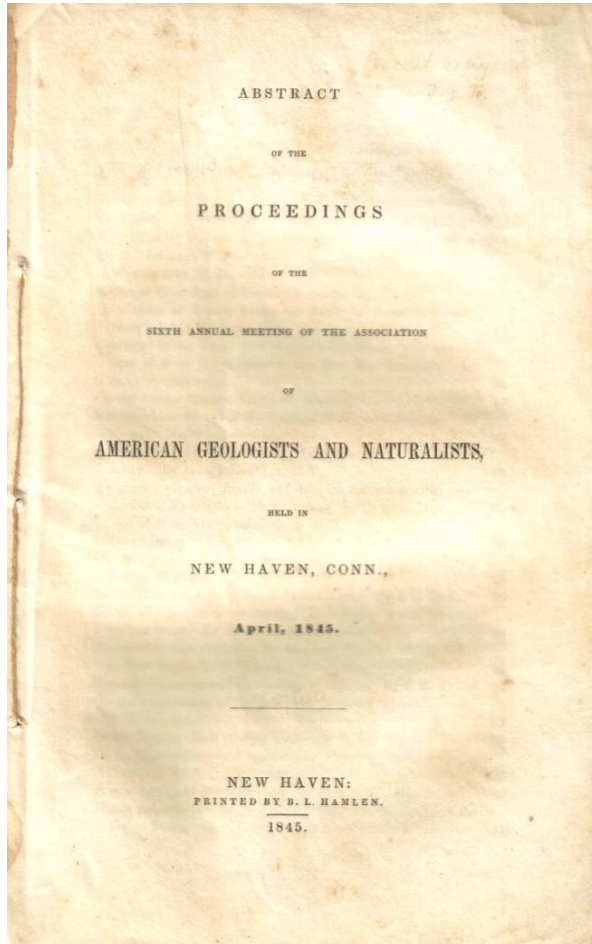
The Dragoon Expedition started at Ft. Gibson and traveled across southern Oklahoma for the purpose of making contact with native Indian tribes in the Wichita Mountain region. The official report of the expedition is believed to contain the first published report of oil within what is now Oklahoma.

The oil springs were observed in an area to the west of the present-day Healdton oil field, where numerous seeps have been documented. Four other expedition participants, including famed western artist George Catlin, kept journals which were later published, but none of them mentioned the oil seeps.

“CAMP CHOCTAW, July 13. - Passed through the last of the Cross Timbers, and entered upon the Grand prairie; marched at half past 8 o'clock from Camp Choctaw west by north twenty-three miles, and encamped on a creek; highly beautiful country, tolerably well watered; command impeded to-day by sick men in litters; Indians, supposed to be Pawnees, were seen to-day; wild horses in large herds; one of the Indian guides caught one of them; immense herds of buffalo; **passed several springs of rock oil, (petroleum.)** Command halted at 6 o'clock p. m.; rear guard did not come up until 10 – kept back by the sick falling in the rear.”

Wheelock (1834)

Lt. Johnston's 1845 Report



Lt. A. R. Johnston, who was based at Fort Washita, produced the first geological description of the Arbuckle Mountains and the oil seeps along its northern margin. The bitumen-saturated sand was probably among those later quarried for asphalt in what became known as the Buckhorn District.

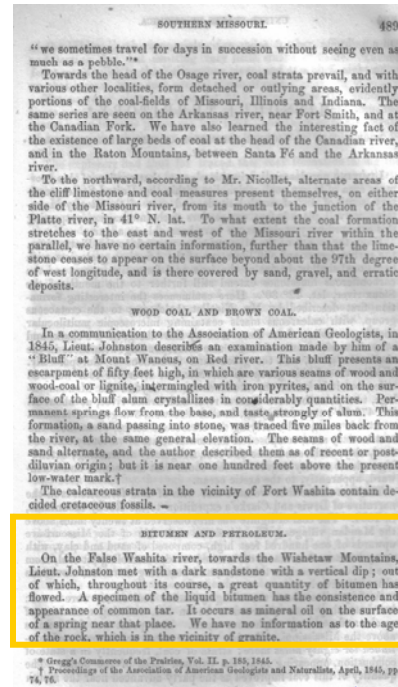
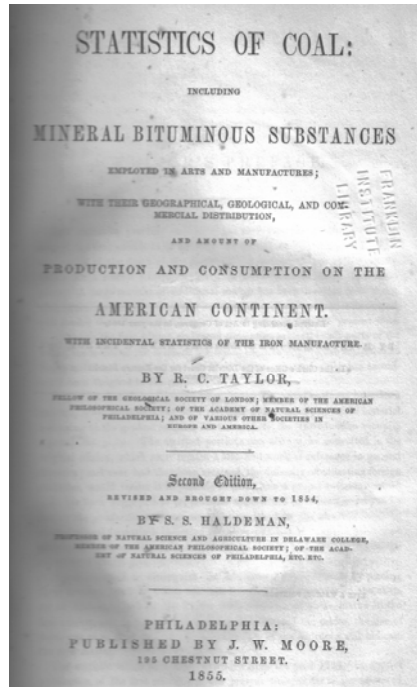
Lt. Johnston's report was presented at a convention of the Association of American Geologists and Naturalists (AAGN), which from 1840-1848 was the largest geological society in North America. AAGN changed its name to the American Association for the Advancement of Science (AAAS) in 1848.

"A few miles further on, the strata became warped around until they stood east and west, and to the south a few miles was a high hill produced by the granite in its westward course; **parallel to this is an outcrop of dark sandstone with a vertical dip, out of which throughout its course has flowed in times past great quantities of bitumen. Many places were seen where evidently the bitumen had recently ceased to flow, but only one spot at which it yet exudes.**

A specimen of the liquid bitumen was obtained, which has the consistence and appearance of common tar. It occurs as mineral oil on the surface of a spring near that place."

Johnston (1845)

Lt. Johnston's 1845 Report



Statistics of Coal by R. C. Taylor, a standard reference work of the antebellum era, summarized Lt. Johnston's report in both of its editions, in 1848 and 1855.

The use of antiquated place names and spellings created confusion for subsequent authors, such as Bowen (1865) and Antisell (1865), who relied on Taylor's books for information regarding Lt. Johnston's report.

To his credit, Taylor is the only known author to have provided a proper citation for Lt. Johnston's work.

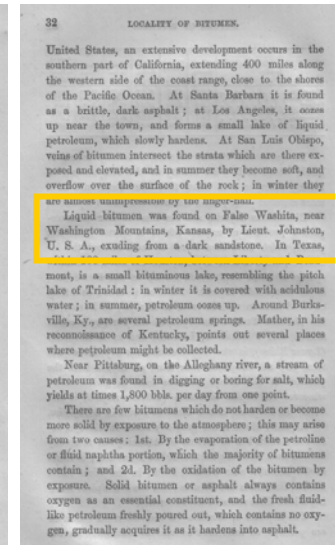
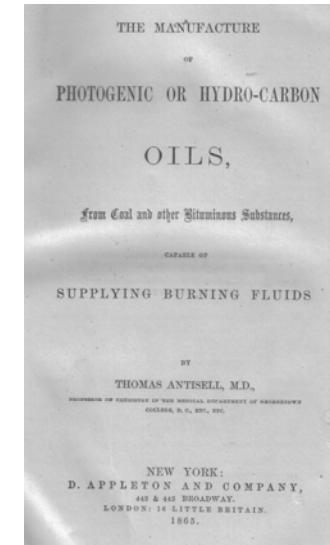
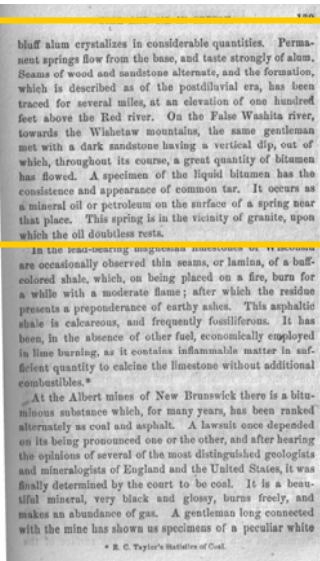
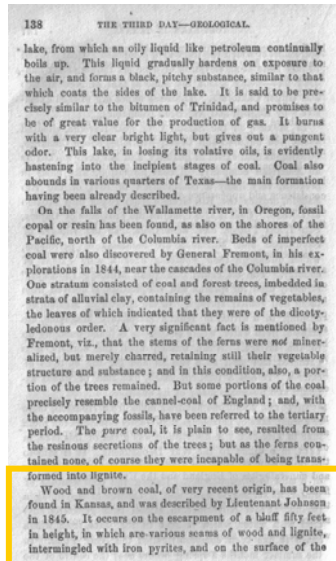
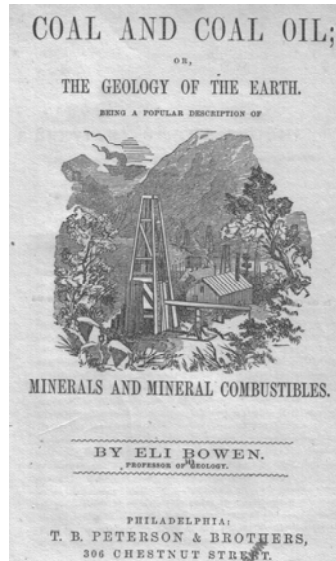
"BITUMEN AND PETROLEUM

On the False Washita river, towards the Wishetaw Mountains, Lieut. Johnston met with a dark sandstone with a vertical dip; out of which, throughout its course, a great quantity of bitumen has flowed. A specimen of the liquid bitumen has the consistence and appearance of common tar. It occurs as mineral oil on the surface of a spring near that place. We have no information as to the age of the rock, which is in the vicinity of granite."

Taylor (1855)

Lt. Johnston's 1845 Report

Taylor's (1848, 1855) books were the source of information for other authors who mentioned Lt. Johnston's report.



“Wood and brown coal, of very recent origin, has been found in Kansas, and was described by Lieutenant Johnson in 1845. On the False Washita river, towards the Wishetaw mountains, the same gentleman met with a dark sandstone having a vertical dip, out of which, throughout its course, a great quantity of bitumen has flowed. A specimen of the liquid bitumen has the consistence and appearance of common tar. It occurs as a mineral oil or petroleum on the surface of a spring near that place. This spring is in the vicinity of granite, upon which the oil doubtless rests.”

(Bowen (1865))

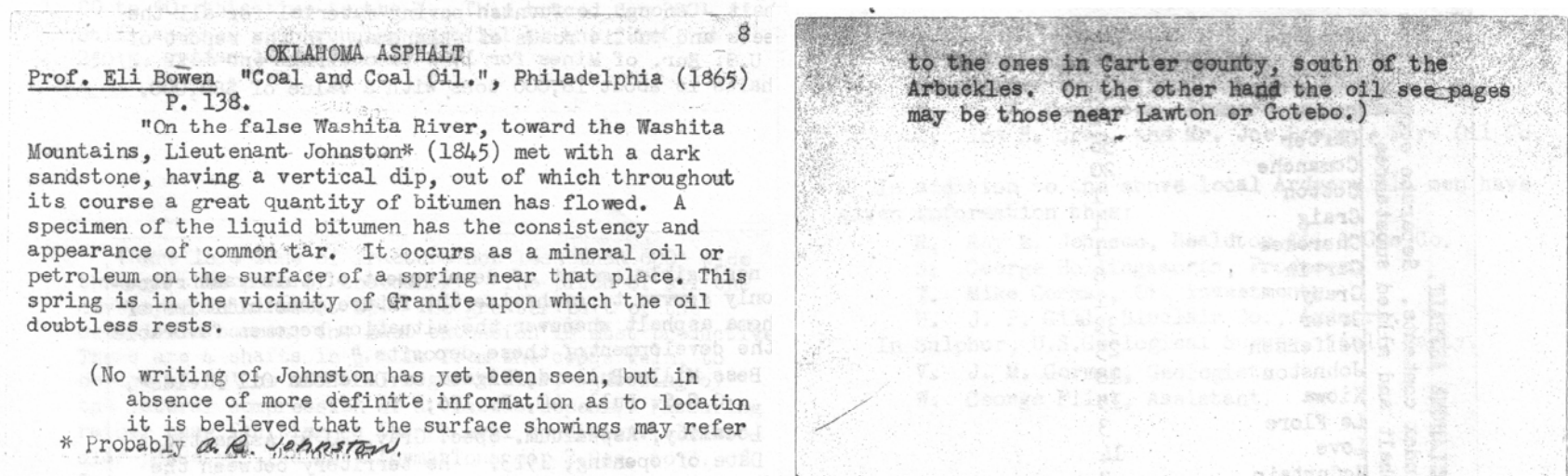
“Liquid bitumen was found on False Washita, near Washington Mountains, Kansas, by Lieut. Johnston, U. S. A., exuding from a dark sandstone.”

Antisell (1865)

It would be difficult for most people to identify the location of Lt. Johnston's oil seeps from these second hand accounts. They certainly would not find them by looking in Kansas.

Lt. Johnston's 1845 Report

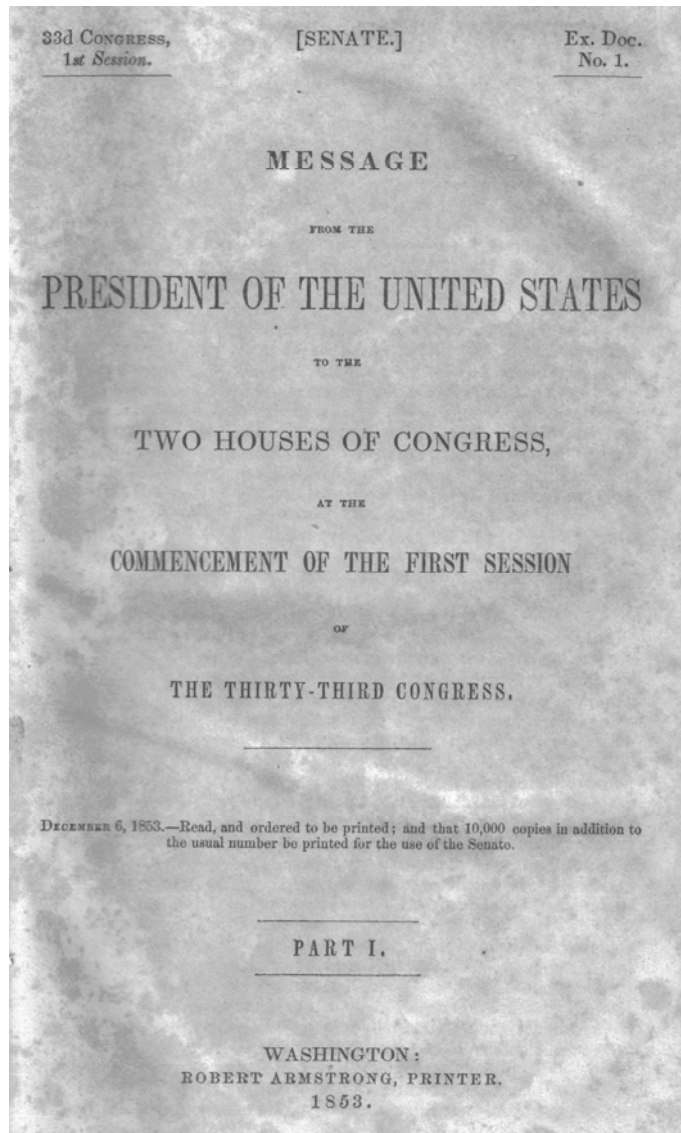
Goodrich (2006), in a comprehensive compilation of all known oil seeps in Oklahoma, found Bowen's (1865) paraphrased version of Lt. Johnston's report, but could not determine the original source of the publication. Below is a copy of the note card that is reproduced in the Oklahoma Geological Survey Open File Report.



"No writing of Johnston has yet been seen..."

(Goodrich, 2006)

Chickasaw Indian Agent Reports



Chickasaw Indians who had relocated to southern Oklahoma quickly recognized medicinal value in the numerous oil seeps. This was mentioned by the Chickasaw Indian Agents in at least 4 of their annual reports to Washington, which were published as U. S. Congressional Documents.

Some of the seeps were used for commercial purposes as medicinal spas, which reportedly attracted clients from a multi-state area and advertised in regional newspapers in the pre-Civil War era.

There is insufficient information in the official reports to determine which of the seeps in southern Oklahoma were being described, and the author to date has been unable to locate an historical study that addresses this issue.

Chickasaw Indian Agent Reports (1845-1853)

“There are some mountains in the district, several mineral springs, **two oil springs**, and one or two salt springs. (Upshaw, 1845, p. 524-525)

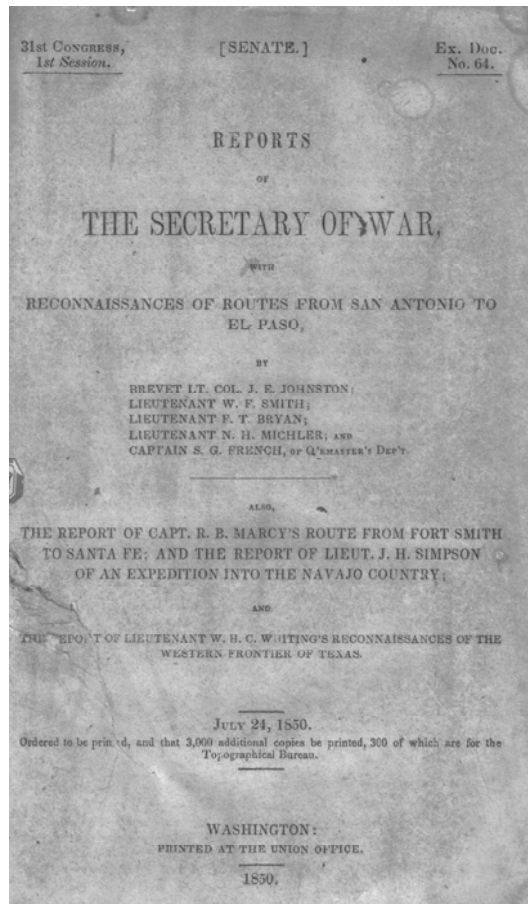
“There are some good salt springs that could be worked to great advantage, and **there are several medical springs, which have proved to be of great benefit to invalids who have attended them during the two last summers.**” (Upshaw, 1846, p. 275)

“I have in a former report mentioned that there were several valuable mineral springs in the district, **among which may be found the “oil spring.” A number of persons from Texas, besides Indians of various tribes, have visited this spring this summer and find it very beneficial. Some, who were very much afflicted with the rheumatism, were cured almost immediately.**” (Upshaw, 1848, p. 530)

“The oil springs in this nation are attracting considerable attention, as they are said to be a remedy for all chronic diseases. Rheumatism stands no chance at all, and the worst cases of dropsy yield to its effects. The fact is, that it cures anything that has been tried. A great many Texans visit these springs, and some from Arkansas. They are situated at the foot of the Wichita mountains on Washita river, and also on Red river. There is one or two of great medicinal properties.”

(Smith, 1853, p.401-402)

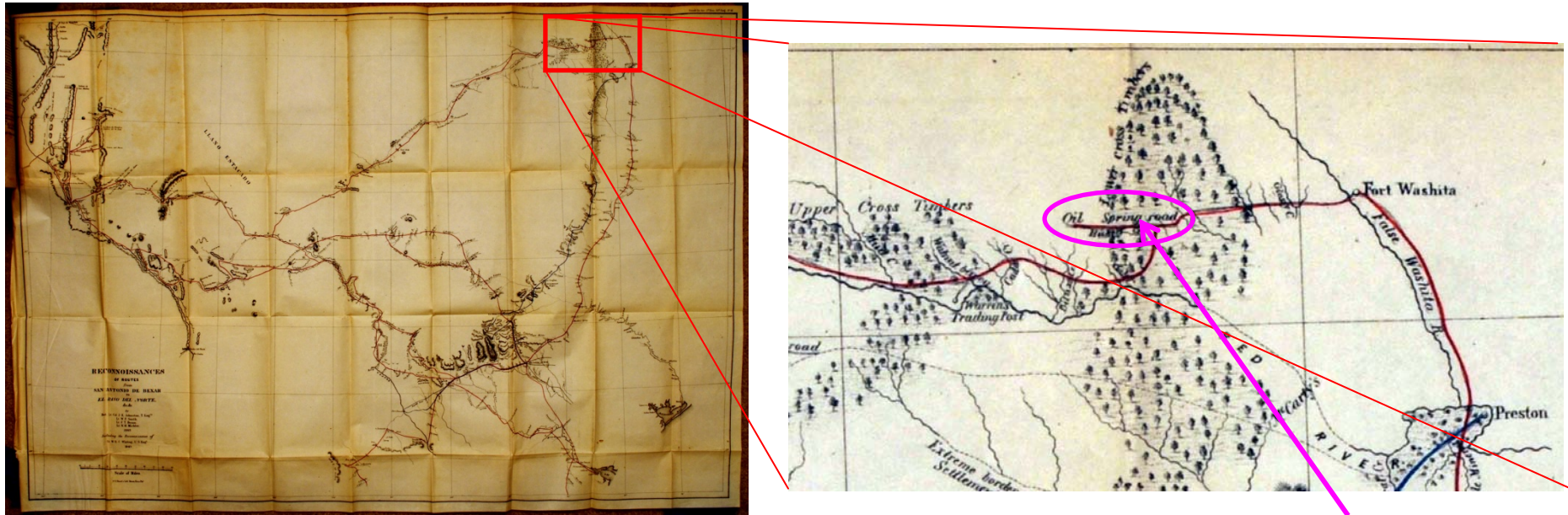
Lt. Michler's 1850 Report



Michler (1850)

In the 1840s and 1850s, several military expeditions were sent to explore potential transportation routes across the west. Lt. Michler was assigned to examine a corridor from the Red River to the Pecos River, as part of a larger program in 1850 to define the best route across Texas to satisfy the needs of those headed to California to take part in the gold rush.

Lt. Michler's 1850 Report



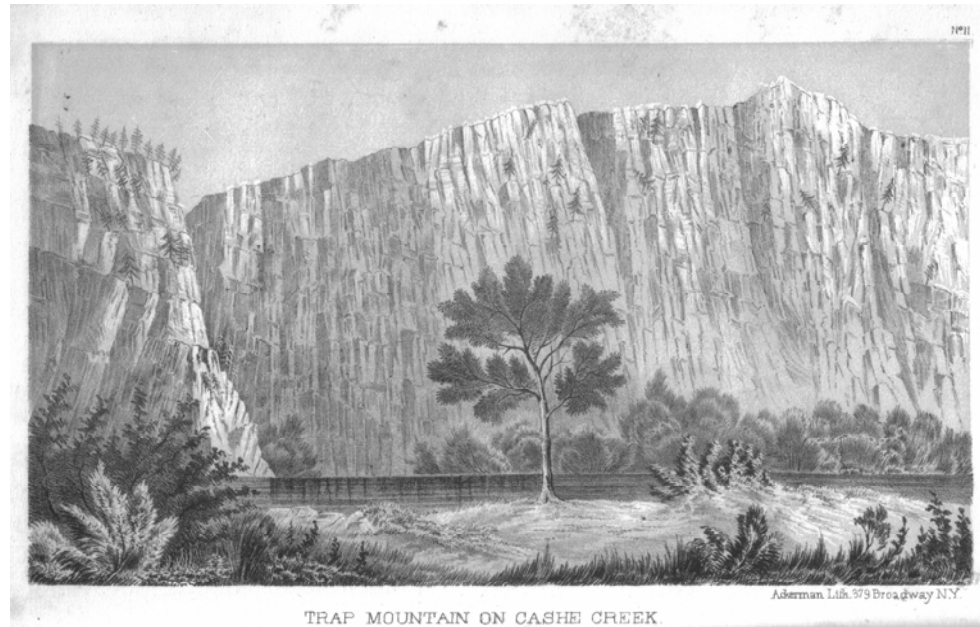
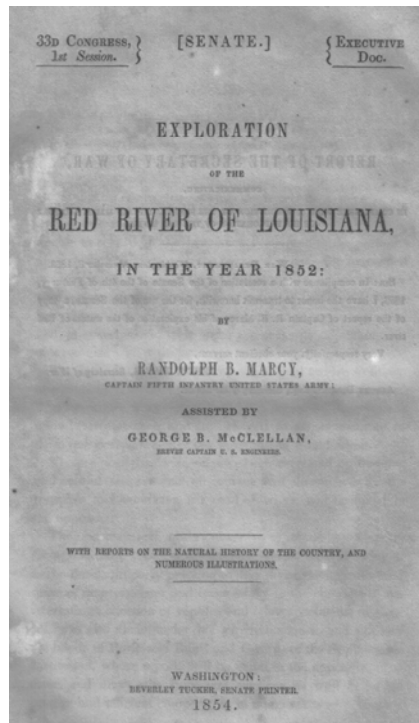
Oil Spring road

Lt. Michler's expedition was assigned to north Texas, but it started from Fort Washita. Lt. Michler not only made a brief mention of the medicinal use of an oil spring, but also shows the road leading to it on what is probably the first published map to depict oil in what is now Oklahoma. If the map scale is accepted literally, the end of Oil Spring Road would be to the southwest of Ardmore, perhaps near the Criner Hills.

“The road laid down on the map as the “Oil Spring road” leads to a spring which its name implies; the oil is said to resemble naptha, and patients already resort to it for its beneficial effects.”

Michler (1850)

Capt. Marcy's 1852 Red River Expedition



View of Medicine Bluffs (Marcy, 1854)

Captain Randolph Marcy's 1852 Red River Expedition traveled westward through southern Oklahoma and the Texas Panhandle to find the source of the Red River. On the return trip Marcy camped near Medicine Bluffs in the northeastern Wichita Mountains and recommended the area as a good location for a new western military post that would later become Fort Sill. Capt. Marcy's report of the itinerary mentioned oil within an igneous outcrop near Medicine Bluffs, but the accompanying geological report of the expedition did not.

"Large veins of quartz were seen traversing this formation, and upon an examination of specimens, we found it to be cellular or spongy, with the cells filled with liquid naphtha, of about the consistency of tar, and having a strong resinous odor."

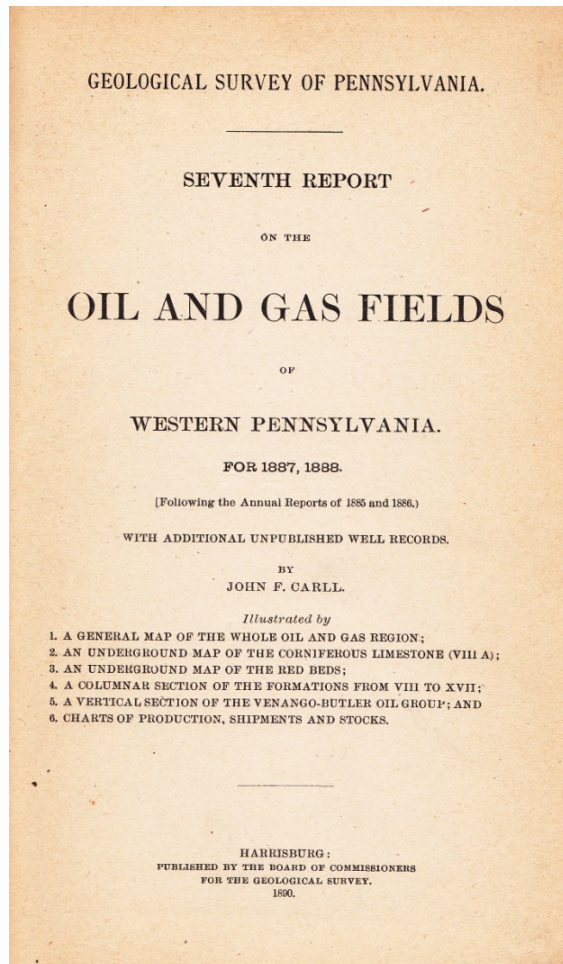
(Marcy, 1854)

Oklahoma's First Oil Well

The 1859 Drake well in Titusville, Pennsylvania, is commonly but not unanimously credited with being the first commercial oil well that was both drilled and had oil as its primary objective. Prior to this, there were many areas around the globe where oil was obtained from seeps or shallow hand dug wells. Oil was also obtained as a contaminant from commercial brine wells, and the drilling technology available from the salt manufacturing industry in western Virginia, Ohio, and Pennsylvania was utilized in the early Pennsylvania oil industry.

According to Wright (1926), Oklahoma had joined the ranks of oil producers in 1859, the same year as the Drake well. Lewis Ross, the brother of Cherokee Chief John Ross, reportedly hand dug a well in search of brine for his salt manufacturing business, and stumbled onto oil by accident. This well, located in Mayes County, apparently produced for a number of years with the production used primarily for medicinal purposes.

Oklahoma's First Well Log (1888)



| | | |
|------------------------------------|------------------------------------|--|
| 340 | GEOLOGICAL SURVEY OF PENN'A, 1889. | |
| SS. (oil show near bottom), | 88 to 681 | |
| Shale, | 18 " 699 | |
| SS., | 51 " 750 | |
| Shale, | 200 " 950 | |
| SS., pebbly (little oil and gas), | 50 " 1000 | |
| Shale, white and blue, | 200 " 1200 | |
| SS., pebbly, coarse, | 10 " 1210 | |
| Shelly drilling, | 90 " 1300 | |
| Limestone, sandy (large gas flow), | 7 " 1307 | |

This well has since been drilled considerably deeper, but was not improved.

Guffey Well.

1888.

Located near Pactolus, 2 miles north of Grayson, the county town of Grayson county, Kentucky. Owners, J. M. Guffey & Co. Authority, F. H. Oliphant, manager.

| | | |
|---|------------|--|
| Quicksand, | 28 to 28 | |
| Slate, black, | 30 " 58 | |
| SS., white and dark, | 12 " 70 | |
| Slate, black, | 10 " 80 | |
| Limestone, "Mountain limestone," | 20 " 100 | |
| Shale, sandy, dark-green, | 100 " 200 | |
| " dark, | 130 " 330 | |
| Slate, light-gray, with sand shells, | 270 " 600 | |
| SS., dark, and shale, | 50 " 650 | |
| " slate, and shells, | 85 " 735 | |
| Slate, black, | 22 " 757 | |
| SS., "Berea," 2' to 5' good (some oil and gas), | 112 " 869 | |
| Slate, gray, | 25 " 894 | |
| " red, | 6 " 900 | |
| " black, | 116 " 1016 | |
| " white, | 5 " 1021 | |
| " black, | 169 " 1190 | |
| " white, | 20 " 1210 | |
| " black, | 95 " 1305 | |
| " white, | 118 " 1423 | |
| Limestone, "Niagara" (oil and gas), | 2 " 1425 | |
| " fine and coarse alternately, | 55 " 1480 | |

Strong flow of salt water at 1475', filled up rapidly within 100' of the top. Unproductive.

Choctaw, Indian Territory, Well.

1888.

Located on a branch of Clear Boggy River, 14 miles westerly from Atoka, Atoka county, Choctaw Nation.

| | | |
|--|------------------------|-----|
| Carll.] | OIL AND GAS. CHAP. XX. | 341 |
| Owners, National Oil Trust Co., of St. Louis. Record copied from the note book of the manager, the late Dr. H. W. Faucett. | | |
| Slate, blue (troubled with mud), | 168 to 168 | |
| SS. and slate, | 201 " 369 | |
| " | 10 " 379 | |
| Slate, | 45 " 424 | |
| SS., | 30 " 454 | |
| " and slate (small oil indications), | 70 " 524 | |
| Sandy, | 80 " 604 | |
| SS., | 10 " 614 | |
| Shale and hard sand, | 45 " 659 | |
| Shells, | 25 " 684 | |
| Slate and shells, | 40 " 724 | |
| More sand than slate, | 68 " 792 | |
| SS. (807' casing), | 29 " 821 | |
| " and slate (sand at 833'), | 12 " 833 | |
| " (oil at 917', tubed and tested, much salt water), | 120 " 953 | |
| Slate, | 20 " 973 | |
| " and sand, | 50 " 1023 | |
| " clean, | 35 " 1058 | |
| " and shells, | 104 " 1162 | |
| SS. (salt water and good show of oil), | 73 " 1235 | |
| Slate, | 13 " 1248 | |
| Sand shells, | 11 " 1259 | |
| Slate and shells, | 18 " 1277 | |
| Sand shells and slate (900' water in hole), | 19 " 1296 | |
| SS. (1200' water in hole, small oil show at 1302'), | 12 " 1308 | |
| Slate, | 27 " 1335 | |
| SS. (oil show at 1347', oil and gas at 1391'), | 79 " 1414 | |

Still in sand and drilling, July 23, 1888.

Carll (1890)

The oldest preserved log of a well in Oklahoma was from 1888 in Atoka County. It reported finding oil shows at six different depths. Most geologists would not think to look for it in a publication of the 2nd Pennsylvania Geological Survey.

Conclusion

By the time of Drake's 1859 oil discovery, there was significant public domain information indicating that the territories later to become Oklahoma had oil potential.

By the early 1900s, when Oklahoma became a state and a major oil province, these reports had been largely forgotten, and they have never been adequately recognized in the modern petroleum geology literature.

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