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# From The State Geologist

## Change and Unsolved Mysteries

by John P. Bluemle



During the 2003 (58<sup>th</sup>) Legislative Session, the Legislature passed the following amendment to the Geological Survey's appropriation bill:

**Section 14. Industrial Commission Review – Oil and Gas Division and Geological Survey Merger – Budget Section Report.**

*The industrial commission shall review the implementation of the merger of the oil and gas division and the geological survey to be accomplished by July 1, 2005. In conducting the review, the industrial commission shall consider allowing the oil and gas director to appoint the state geologist, recommend a name change for the merged oil and gas division and geological survey, and identify efficiencies and savings that will result from the merger. Before November 1, 2004, the industrial commission shall present a report to the budget section regarding the recommendations for the oil and gas division and geological survey merger. The industrial commission shall report its findings and recommendations, together with any legislation required to implement the recommendations, to the fifty-ninth legislative assembly.*

The Conference Committee that considered the bill also stipulated that the funding for two geologist positions would be eliminated. One of these cuts became effective on July 1, 2003 and one Survey geologist's employment ended at that time (he moved to Denver). The other position will terminate on July 1, 2004. Although the second position is not specified, the amount of funding involved is that of the State Geologist's salary so it can be inferred that the intent is to eliminate funding for the position of State Geologist, effective that date.

We can certainly all support efforts to streamline state government. I have seen many changes in the Survey since I arrived in 1962 and I know that change and reorganization are almost surely inevitable. I decided some time ago that I would retire from my position in 2004, so none of the proposed changes will affect me personally. I sincerely hope, though, that the whole reorganization process is carefully considered and conducted and that the final result is in the best interests of the citizens of North Dakota.

Now let's consider some other matters. Here at the Survey, we occasionally receive interesting requests for information or answers to unusual questions. I recently came across several letters, written in the 1920's to the then State Geologist Arthur Gray Leonard. I will repeat the correspondence here, indicating Dr. Leonard's responses to the questions (spelling has been corrected, but otherwise the text is left as originally written).

Kulm, ND  
Dec. 22, 1922

State Geologist  
Grand Forks, ND

Dear Sir:

*I wish to ask you some questions concerning a peculiar light which is visible most every night on the same place. It is about the size of a straw pile, at times it seems to be right close to the ground and then again it will be about 150 ft up in the air. It is the brightest a little before sunset and generally continues until midnight, being often so bright as to cause shadows.*

*I wish to know if there could be Oil or metal in the ground if so how best to locate it and what means to use. Please write me telling me what you think about it also giving all necessary information.*

Very truly yours  
Mr. A. V. Arvidson

Dr. Leonard wrote two responses:

Mr. A. V. Arvidson

January 3, 1923

Kulm, North Dakota

Dear Sir:

*Your letter of December 22 reached here during my absence, and hence the delay in replying to it.*

*The light you speak of could not be caused by oil or any metal in the ground. If it were caused by gas or oil it would be an easy matter to locate the place these come from and determine what caused the light. I cannot say what it is that produces the peculiar light you mention, but it could not be due to any metal or to oil. The only known way to determine whether oil occurs in the rocks in commercial quantity is to drill a well. The conditions necessary for the occurrence of oil are given in a bulletin which I am mailing, under separate cover.*

*I may be able to secure some information as to the cause of the*

*light when I have time to take up with some of the other men here at the University and, in that case, I will write you further regarding it.*

Very truly yours,  
State Geologist.

Leonard received his letter (above) back with a handwritten note on the bottom from A. V. Arvidson (no date given):

*"Have you tried to secure information concerning the peculiar lights I wrote you about? I wish you could let me hear from you in regard to it. If there are any questions you wish to ask I'll be glad to tell you all I can about it. We are anxious to find out just what can cause it.*

Yours truly  
A. V. Arvidson

Leonard replied in February:

Mr. A. V. Arvidson  
Kulm, North Dakota

February 7, 1923

Dear Sir:

*Replying to your recent inquiry, though I have spoken to several regarding the peculiar lights, I have not been able to get any suggestion as to their cause. There are some very peculiar and unusual features about the lights which make it very difficult to explain and I have so far been unable to find any explanation.*

*If I secure any information I will let you know.*

Very truly yours,  
State Geologist

Another letter to Leonard, this one written in 1926, expressed concern about sounds, not lights. It came from Zeeland, North Dakota.

Zeeland, N.D.  
Nov. 12, 1926

State Geologist  
C/o State University  
Grand Forks, N.D.

Dear Sir:

*For the past eight years I have at certain times heard certain strange, thundering noises which seem to be far in the earth directly under my house on the farm, 16 miles north of Zeeland, N.D. The most severe crack took place about two and a half years ago, when it was so bad that my house shook and the panes in the windows broke - I never have tried to find out what the reason for this is because I thought maybe they would cease but it seems to be getting worse. My family is scared out and are afraid to live in the house. Will you please let me know what your opinion for this is? If there is other information*

*you desire - let me know and I will answer at once.*

Yours truly -  
C. C. Huber  
Zeeland, N.D.

This was Leonard's response:

Mr. C. C. Huber

November 17, 1926

Zeeland, N. Dak.

Dear Sir:

*Replying to your letter of November 12 regarding the noises heard about your place, the disturbance two and a half years ago which shook the house might have been produced by an earthquake. But had there been an earthquake in the vicinity at the time, it should have been reported by others and the papers should have had notices of it. Then, too, North Dakota is not a region which is liable to be affected by earthquakes and in some places there are "roaring" wells as they are called, the noise or roaring being caused by air escaping from crevices in the rock. It is possible that the noises you mention may be caused in this way.*

*While I can offer many very satisfactory explanations of the disturbances and noises, I am very sure that there is not the slightest danger of these doing any damage of any consequence. There is probably no place in the United States which is safer from earthquakes than central and western North Dakota and I do not know of any other kind of disturbance of the earth's crust which could possibly cause any harm in your vicinity. Volcanic disturbances are, of course, out of the question, since nothing in the nature of a volcano would be found anywhere in this region.*

Very truly yours,  
State Geologist

Leonard received the following response in December:

Zeeland, ND  
Dec. 10 - 1926

Mr. A. G. Leonard  
State Geologist  
Grand Forks, N.D.

Dear Sir:

*I have your letter of Nov. 17<sup>th</sup> in regard to the noises I heard about my place. These noises are getting more pronounced and I hear them oftener day by day - and am figuring on moving all my farm buildings to a different location. I am wondering if you would come out to my farm and investigate this matter and what your charges would be - Please be so kind and let me hear from you.*

Yours very truly  
C. C. Huber  
Zeeland, ND

I do not know whether Dr. Leonard ever visited the Huber farm.

The letters tell their own story, but it is apparent that Dr. Leonard really didn't know what caused either the lights or the noises. Neither do I. Assuming no attempt at a hoax was involved and that the letter writers were honestly and accurately describing a genuine event they had actually seen and heard there has to be a logical explanation.

Regarding A. V. Arvidson's letter, I recall that, in the 1940's, when I was a boy, there was a peat bog burning on the edge of the Iowa town I lived in. It was close to the cemetery. At night it gave off a dim light, but I also recall that there was a characteristic smell of peat burning. Perhaps the strange light that Arvidson described was smoldering peat or possibly burning methane being generated by decay of organic material in alluvium. Another possibility might be burning lignite, but the Kulm area is probably too far east for the occurrence of lignite. If anything was burning, it might have given off a light, but it should probably also have had an odor and it should have generated heat; Arvidson's letters were written in winter and any heat might have melted snow in the immediate area. It should have been easy to identify it if it was caused by something burning.

I did a quick Internet search and learned a lot about burning coal and peat beds, but I found nothing about light being produced by the burning peat or other organic materials. However, as I said, I do recall seeing a faint glow associated with the burning peat bed in Iowa that I mentioned, so I would not discount the possibility. I've also seen light at night from burning lignite beds in the badlands in western North Dakota.

I suppose the noises described by Mr. Huber somewhat fit earthquake activity - certainly, shaking strong enough to break windows suggests an earthquake. However, the fact that the noises went on for a long time, over a period of several years, and no earthquakes were reported during that time suggests some other cause. Leonard also pointed out that earthquakes are not common in North Dakota and when they do occur, they are not strong. Our records show that earthquakes that might have been felt in the Zeeland area occurred in 1909 and 1943 (and these were felt over a large area) but none was reported in the 1920's.

Leonard's "roaring wells" suggestion might have some merit, particularly if it was known whether an artesian well existed nearby. Late in the 19<sup>th</sup> Century and early 20<sup>th</sup> Century, wells drilled to the Dakota Formation aquifer in eastern North

Dakota often blew out, and this had to have been very noisy - a well blowing out can be deafening. If there had been a blowing well in the vicinity, Huber would have known that. I don't think the noise Huber described fits the description of a well blowing out. In any case, Huber doesn't say if there was a well nearby at all.

Leonard commented that he can "offer many very satisfactory explanations of the disturbances and noises." I wish he had! I can't think of many logical possibilities to explain noises like Huber described.

If any of our readers has an explanation for either the lights or sounds, please contact me and tell me what they might have been.

#### **Editor's comments:**

*According to Professor Len Kuhi, Chair of the Department of Astronomy at the University of Minnesota, the light Mr. Arvidson describes is unlikely to have been astronomical in origin, since no major stellar or planetary events occurred at or around that time. Furthermore, any object in the sky, be it the Moon, a planet or a star, would move as the earth rotates. According to Mr. Arvidson, the light he observed was always in the same part of the sky.*

*Early trappers and explorers reported strange rumbling sounds coming out of the Black Hills in South Dakota. These reports spanned a period of about 50 years, from the early 1800's to about 1855. Some believed that the sounds were thunder from distant thunderstorms, but many remained unconvinced. One recent explanation is that the rumblings were caused by the ignition of gases that had accumulated in deep underground caves and caverns. Such an explanation is unlikely in Mr. Huber's case since there are no known deep caves or sources of natural gas in this part of North Dakota. However in the early 1970's, in neighboring Emmons County, a hole opened up in a field near the town of Strasburg that has continued to grow in size and has since been joined by a second hole about 50 feet away. Although these holes do not appear to be more than a few feet deep, they may extend laterally for some considerable distance and may even be linked. The holes are located in unconsolidated glacial sediment, and are thought to be some form of erosional pipe (see North Dakota Note No. 23 available at [http://www.state.nd.us/ndgs/caves/caves\\_h.htm](http://www.state.nd.us/ndgs/caves/caves_h.htm) or by request). Much of McIntosh County, including the Zeeland area, is also covered by glacial sediment similar to that found in Emmons County. Could the noises that Mr. Huber and his family heard have been caused by the collapse of similar, possibly larger erosional voids? He did not mention any surface evidence of collapse, but if it occurred deep in the sediment, there may not have been any.*