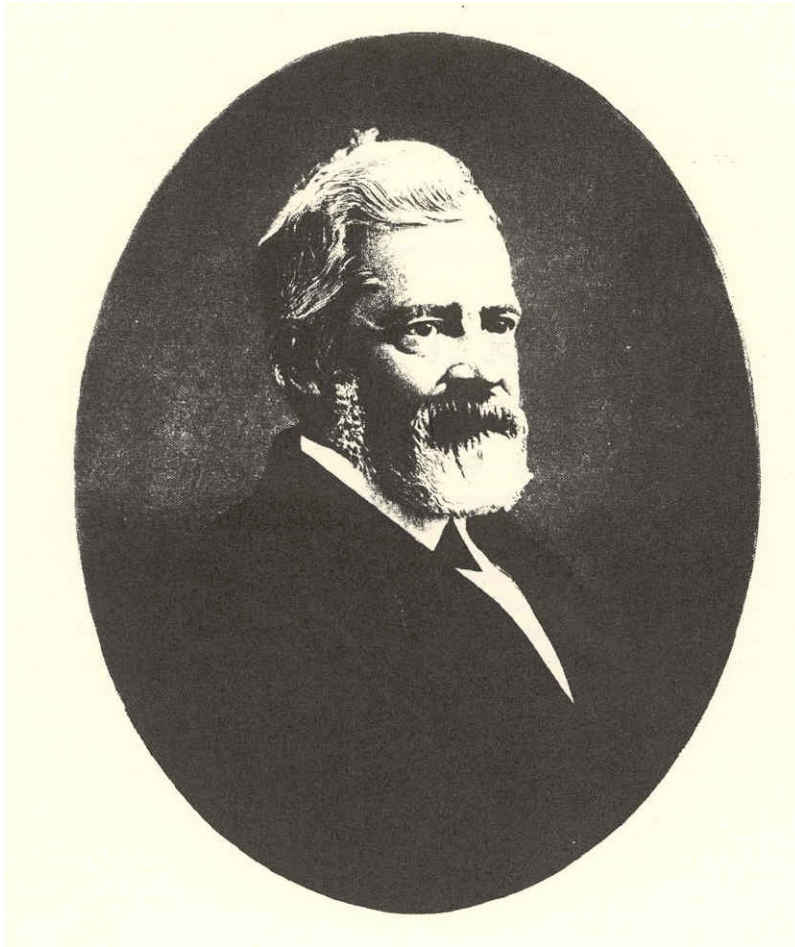

CHESTER HISTORICAL SOCIETY

Volume 5, Issue 1 A Publication of the Chester Historical Society Editor: John Garvey

May 2006



Doctor Heman S. Lucas

Father of the Abrasives Industry

By John Garvey

By the time the Chester constable arrived at the Middlefield Street home of Doctor Heman Lucas in 1854 to arrest him on conspiracy charges, the doctor had already contributed much to Chester. He had been the doctor in Chester Factories Village for 10 years, was a founding member of the Chester Methodist Church and one of their largest contributors, and was one of the leaders of the temperance movement trying to rid Chester of illegal liquor sellers. It was, in fact, his zealous pursuit of the illegal liquor trade that led to his arrest that day in 1854.

His brush with the law did not, however, end his contributions to Chester and his greatest achievements were yet to come.

He was born in Blandford in 1814 and attended public schools there and in Canaan, NY where his family moved in 1828. He studied for one year at Wesleyan Academy in Wilbraham (not Wilbraham-Monson Academy) and then worked his way through the Berkshire Medical Institute in Pittsfield, graduating in 1841.

He spent three years practicing medicine and dentistry in Lee before starting his long service in Chester in 1844. At some point in his prior life he had developed a strong interest in geology and he could not have picked a better location in which to settle than our valley. Faced with the abundance of minerals in the surrounding hills it didn't take him long to discover a useful purpose for one of those minerals.

Visit with the Historical Society
at the
Old Jail

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**CHESTER ON TRACK**  
**SATURDAY, MAY 20**  
**9:00AM TO 4:00PM**

### **His First Patent**

In 1852 he developed a chemical process by which he could extract a green dye from the local green mineral called Serpentine. He was awarded a patent for this process, the first of many patents he received all relating to the geology of our area. He called the dye "Hampden Green" and with some partners formed the Serpentine Paint and Fire-Brick Company, serving as their chemist for the first year. (By this same patented process he was also able to produce commercially viable Epsom Salts, or Magnesium Sulfate.)

A consistent and stable green dye which would hold up well on paper was much sought after at this time. For many decades the most popular green dye was "Paris Green" but it had been recently determined that chemicals in the dye, when brought into contact with mold, produced a poisonous arsenic gas.

After he sold his interest in the company it was renamed the Hampden Paint and Chemical Company and relocated to Springfield, where it operated continuously until just a few years ago. The "Hampden Green" dye that Lucas developed was later used by the federal government to make the country's first "greenbacks".

### **His Temperance Activity Leads to His Arrest**

At the time that Lucas returned here in 1844, Chester was going through dramatic changes from what he would have remembered growing up in Blandford. With the railroad in 1841 came immigrants and the beginnings of industrialization. One of the most visible of the changes was the growing trade in cheap, illegal liquor. One account stated that there were at least six illegal rum sellers in the downtown Chester area alone.

Lucas, with some fellow Methodists and other townspeople, formed what was known as a Carson League. Enforcement of the liquor laws was left to the localities and, in Chester, that meant one overworked constable. The Carson Leagues were temperance organizations that, by their own admission, were essentially volunteer police forces formed to help towns enforce their liquor laws. So it was on February 22, 1854 that Heman Lucas and the Carson League took it upon themselves to visit every rum seller in town and warn them of the consequences of their illegal actions.

The visits certainly produced a reaction from the liquor sellers, but not the reaction desired by the

Carson League.

That very night, a keg of gunpowder was exploded in the Methodist Church, the explosion and resulting fire causing damage so great that the first news reports stated that the building was a complete loss, though within a few days the Methodist society was vowing to rebuild. Funds were solicited in Chester and the surrounding towns and the response was good enough to allow the Methodists to rebuild their church later that same year, however the trouble between the Carson League and the rumsellers was just beginning.

Although the town offered a \$200 reward for information leading to the arrest of those responsible, no arrest was forthcoming so the Carson League, never ones to sit by idly, again took matters into their own hands. With their own funds they hired Benjamin Chamberlain, an ex-policeman from Albany, to come to Chester posing as a liquor salesman to infiltrate the anti-temperance group.

Chamberlain worked undercover for six months, gradually securing the liquor sellers confidence, until he learned of a plot to blow up the grist mill of Dwight Wilcox, a member of the Methodist Church and the Carson League.

The League members surrounded the mill and surprised the perpetrators as they approached the mill. Seven men would eventually be arrested and four of them were convicted of attempting to burn the mill (charges were dropped against three others and one fled town to avoid prosecution).

However, a day after the four men were convicted they brought counter charges against members of the Carson League and Chamberlain, the ex-policeman, charging them with conspiracy and entrapment. They alleged to have twenty witnesses that would testify that it was Chamberlain himself that came up with the idea of burning down the grist mill, and that he provided the keg of gunpowder needed for the job.

Seven members of the Carson League were arrested, including Dr. Heman S. Lucas. At the trial, damaging evidence came out against the Carson League showing that burning the mill was indeed Chamberlain's idea, that he picked the date, he provided the keg of gunpowder and that the money to purchase the gunpowder was provided by none other than the Carson League themselves.

The trial was then postponed to a later date and we have not been able to track down the outcome. Given that Lucas went on to greater things in Chester shows that if he was found guilty the penalty was not severe, and the

law-abiding citizens in town had more respect for him than ever for his actions.

### **Lucas Starts an Iron Foundry in Chester**

Lucas returned his attention to medicine and geology after the excitement of the temperance activities. He certainly had Professor Edward Hitchcock's "Reports on the Geology of Massachusetts" published 15 years earlier, which described "several beds of magnetic oxide of iron" existing in Chester. Lucas discovered this iron ore in 1856. He formed the Chester Iron Company with some other partners – including James Ames from the Ames Manufacturing Company of Chicopee, famous for their sword and cannon production – with the intention of mining the ore. Two of his local partners were his brother, John, and Henry Wilcox of Chester (Wilcox was the owner of the grist mill that featured so prominently in the Temperance tale and was also one of the members of the Carson League arrested with Lucas).

The new company mined a small amount of the mineral in that first year and sent it to an iron foundry in Lenox but a nationwide financial crisis the next year suspended all operations. In 1863 they were ready to start again and Lucas felt confident enough to build a blast furnace in Chester and attempt to smelt the iron here. It quickly became obvious that the ore was of a very poor quality and a commercial grade of iron would never be produced with it.

There are numerous letters in the records of the Ames Manufacturing Company detailing the precarious financial position of the Chester Iron Company and it looked increasingly likely that all the investors would lose their money.

### **Sure Disaster Turns to Sure Fortune**

Any mine in the ground attracted those interested in geology and one geologist that visited the mines of the Chester Iron Company was Professor Charles T. Jackson of Boston (see sidebar on Jackson elsewhere in this newsletter). Jackson took many mineral samples and returned to his Boston laboratory to identify them. He was familiar with a previous study of the emery mines in Turkey and Greece that listed minerals always found in conjunction with emery. He realized that he was identifying all the same minerals in his samples from the Chester mine.

According to Jackson:

*"On the 22<sup>nd</sup> of October last, 1863, I discovered, while surveying an iron mine in Chester, Mass., some beautiful veins of margarite, and from that I ventured to predict the occurrence of emery, but no attention was paid to this prediction by the*

*owners of the mine, who were more intent on the iron ore. A few weeks since, I saw Dr. Lucas, one of the owners, resident in Chester, and I called him into my office, and explained to him the great value of emery, and told him how to detect it, and he promised to make the search I required, and took exact directions from me.*

*The next day after his return to Chester, he found the emery, a big vein nearly six feet wide, which had been mistaken by him for iron ore, it being very magnetic."*

The discovery of emery in Chester, the first discovery of the mineral in the United States, caused a stir not just among geologists but with anyone involved in industrial activity, the abrasive emery being critical in industrial applications.

Emery prior to this discovery had to be imported from either Greece or Turkey which was becoming increasingly difficult as the English and French governments gained exclusive control over those mines.

The company was re-formed as the Chester Emery Company and immediately had contracts to supply emery to firms across the United States. The company grew quickly and in 1868 the directors voted to turn control of the company over to James Ames of Chicopee. Whether Lucas sold his interest in the company or the transfer happened without his approval is not clear, although he immediately formed a new company called the Hampden Emery Company so it seems likely that the move was not done with his approval.

Partners in this new company included his old friend Henry Wilcox, along with Professor Jackson, the man who first alerted Lucas to the presence of emery in Chester. The Hampden Emery Company then sued the Chester Emery Company for control of the Chester mines and after a six year court battle the case was decided in favor of the original company. Lucas had lost control of the Chester mines.

### **Lucas Secretly Looks South**

The political situation in Turkey had changed by this time making the mines there open again for exportation, so Lucas imported Turkish emery to keep his Chester mills in operation while he explored his options. One option was to find another emery source within the United States and reports had reached him that emery had been discovered in the southern United States.

Less than a year after losing control of the Chester mines Lucas traveled to North Carolina accompanied by his wife, Maria, and his trusted assistant, Mrs. Hulda Burdick. Hulda Burdick is the woman that donated her mineral collection to the Hamilton Memorial Library in 1923 and in a newspaper article written at the time of the gift, the reporter related Burdick's description of that first trip south with Lucas.

*"Naturally the little party from up north did not make public the nature of their errand. Setting out from Franklin by horseback they followed the bridle paths for the seven miles up to Corundum Hill, where they soon reached the abandoned mine. There being no means of descent into the hole, they were obliged to turn back, but returned the next day with a rope which was tied about Mrs. Burdick, and she was lowered by Dr. Lucas to the bottom of the hole. There she took some samples of the deposit from various spots as directed by the doctor, and was finally drawn to the surface again with her samples."*

Lucas purchased the mine and returned to Chester with his wife, leaving Hulda Burdick in charge down south. She was responsible for working the mines and sending the raw emery to Chester for processing in the mills. Over the next few years Lucas returned south on many land buying trips. The extent of his holdings in the south are not known but in just one seven year period, from 1891 to 1898, there are over 50 deeds for land or mineral rights recorded by Lucas in just one North Carolina county (Macon County). That kind of activity suggests that his holdings in the south were extensive.

### **Lucas Regains Control of Chester Mines**

In 1878 James Ames died and Lucas seized the opportunity to re-purchase all of the Chester mines. He was back in control. In the same year he took on another partner, Nathan Harwood of Chester, and a few years later sent Frank and George Bidwell down south to run the southern operations of the company. The names of Harwood and Bidwell would remain connected with Lucas and the emery business for years to come.

Frank and George Bidwell were brothers and have been variously described as step-sons or nephews of Lucas. No evidence can be found that they were related to him at all. They certainly were not his step-sons as his marriage to Maria was the first marriage for both of them and they remained married until they died. There also is no evidence that the Bidwell boys were his nephews. The Bidwell family was from Blandford, also the hometown of Lucas, so it is more likely that the families were just close friends.

However, Dr. Lucas did adopt George – the younger brother – in 1890 when George was 20 years old. The adoption papers state that his father was deceased and that George was dependent on Lucas for support. (For the next four to five years George went by the name of George Lucas but changed his name back to George Bidwell just before he married). Both Bidwell boys married North Carolina girls.

From the time that Lucas regained control of the

Chester mines until his semi-retirement in 1894 the company was run by himself, Nathan Harwood as Treasurer, and the Bidwell boys. Harwood, especially, is given much of the credit for the success of the company during this period.

This period saw the building of an extensive estate in Franklin, North Carolina (see accompanying photos) and the Lucas and Bidwell families, along with Hulda Burdick, split their time between Chester and North Carolina.

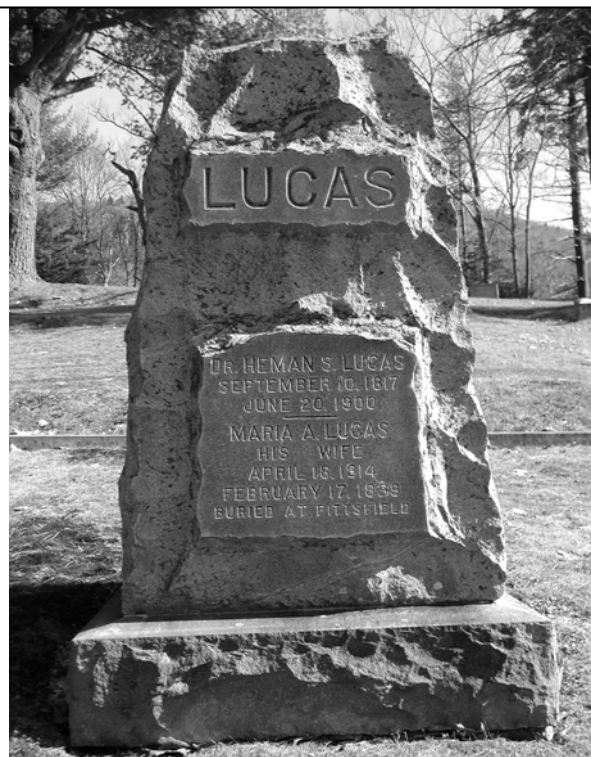
Lucas pulled back from day to day involvement with the company in 1894 and made Frank Bidwell the President. A December 25, 1898 entry in the diary of Estena Bidwell, George's wife, shows Lucas enjoying his retirement in North Carolina with his extended family.

*"In the am George took Aunt Maria and Hulda, Doctor and myself for a ride."*

His wife, Maria, died less than two months later and is buried in Pittsfield, her hometown. Doctor Lucas died sixteen months after her and his obituary states that he was buried in North Carolina.

His emery company continued for several years under the leadership of Frank Bidwell and the industry he created was an important reason for the development of Chester as an important mill town.

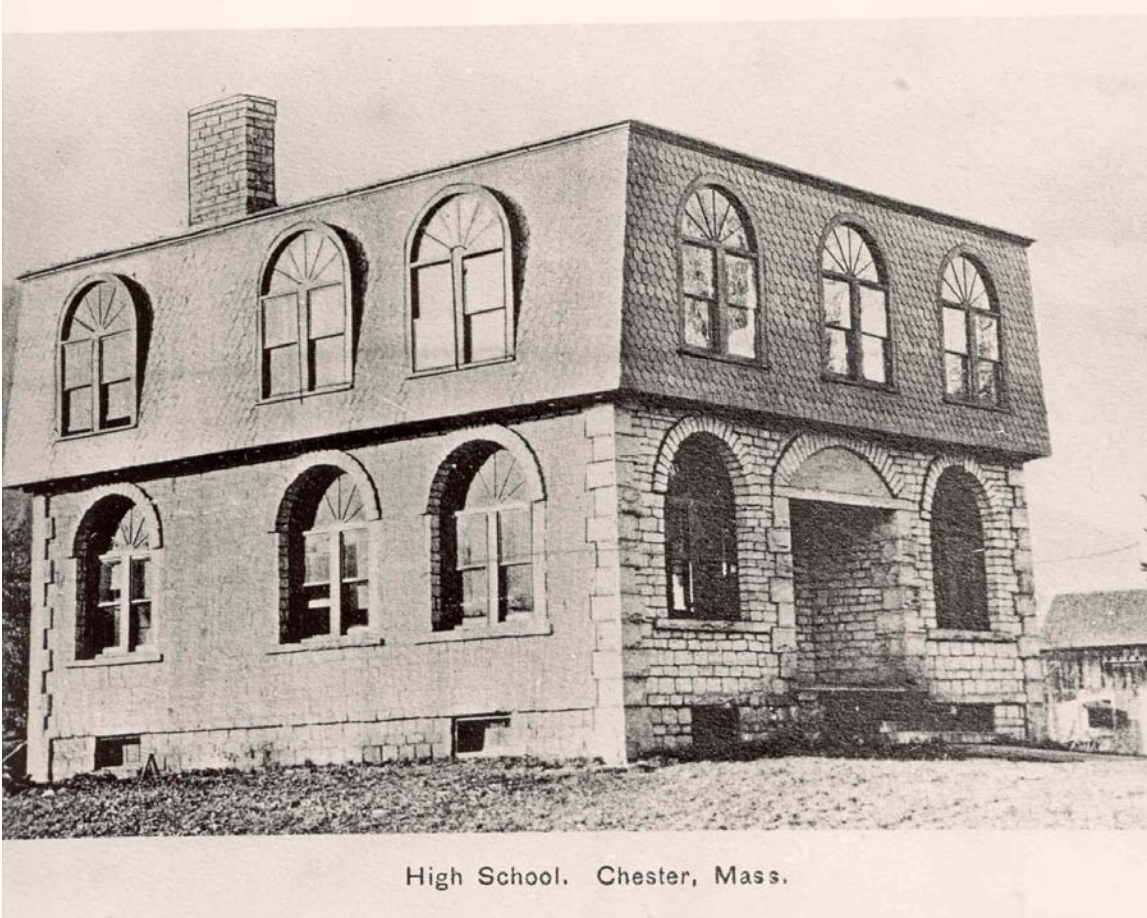
A few years after his death his sons erected a monument in Pine Hill Cemetery dedicated to the memory of their parents. I think it is appropriate that the monument for Doctor Lucas, who so loved the rocks of Chester, is fashioned from a massive slab of roughly-hewn Chester Blue granite.







This photo shows the estate in Franklin, North Carolina built by Dr. Lucas and the Bidwells in the 1880's. The buildings are in what is called the Second Empire style, borrowed from France. The style was popular in the Northeast at the time (though not in Chester) but was virtually unknown in North Carolina which added to the local notoriety of the Lucas-Bidwell estate. Note the style of the house in the foreground and compare it to the original style of the Lucas Museum on Middlefield Street in Chester.



Doctor Lucas built this structure on Middlefield St. shortly before he died with the intention that it be a museum to hold his geological collection. The town did not honor his request but instead operated the high school here until the new high school was built in the 1920's. The building was then sold and converted to a residence, which it still is today. While there are key differences between the buildings it is clear that Doctor Lucas had the North Carolina building in mind when he designed his Chester museum.

### **Patents Granted to Doctor Heman Lucas**

In addition to the first patent mentioned above we are aware of three other patents granted to Dr. Lucas.

His second patent was granted in 1866 and involved an improved blasting cartridge for use in mining operations. Lucas called his invention the "Tornado".

His next patent was granted in 1886 and described a method of joining smaller sheets of mica together to create a larger expanse of a mica sheet than was previously possible. This showed that Lucas was also involved with one of the other mineral industries in town, the mica industry. These combined mica sheets were used as glass windows on wood and coal stoves.

The final patent that we know of was granted to Lucas in 1889 and documented a method of improving the strength and dependability of grinding wheels made of emery. Traditionally grinding wheels made of pure emery were unsafe to operate at high speeds as the emery would break down or shatter. The new method called for immersion of the wheel in a mixture of water and a special glue that would infiltrate the emery and help to bind it together.

### **The Misfortunes of Professor Charles T. Jackson**

We mentioned above that it was Jackson that first informed Lucas of the likely presence of emery in his mine. Lucas acknowledged his debt to Jackson by taking him in as a partner in the emery company but not everyone was as kind to him as Lucas.

According to his biographer Jackson had two discoveries "stolen" from him. When Jackson lived in Paris in the 1830's he conducted experiments in the use of electricity in sending messages through wire (the telegraph) and allegedly built a working model in 1834. On a ship returning to America the following year he met a fellow passenger who expressed great interest in his experiments and Jackson spoke at length with him during the journey. That man was Samuel F.B. Morse who would soon afterwards obtain the patent for the telegraph.

In Boston in the 1840's Jackson did extensive research into the use of ether as an anesthetic in surgical operations and published his findings in various medical journals. Years later Dr. John C. Warren of Massachusetts General Hospital perfected the use of ether in operations and from thenceforward was always credited with discovering the anesthetic properties of ether.

Jackson spent the rest of his life trying to get recognition for his discoveries in those two fields.

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# Chester Historical Society contacts

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|                   |          |
|-------------------|----------|
| Fay Piergiovanni  | 354-7820 |
| Janice Brown      | 354-7778 |
| Grace Oppenheimer | 354-6395 |
| Ed Carrington     | 354-7835 |
| John Garvey       | 354-0234 |



If you have comments on this newsletter please contact the editor, John Garvey, at:  
Chester Historical Society  
Town Hall  
15 Middlefield Street  
Chester, MA 01011

| Item                                                                                         | Price   | Size | Qty | Total  |
|----------------------------------------------------------------------------------------------|---------|------|-----|--------|
| "Chester Folks - The Founders of the Town, Their Ancestors and Descendants" by William Mills | \$18.00 |      |     |        |
| "Memories of the Boston and Albany Railroad" by Norvel Parker                                | \$15.00 |      |     |        |
| "Gravestone Inscriptions for Chester" by Francis O'Leary                                     | \$18.00 |      |     |        |
| "Gravestone Inscriptions for Huntington" by Francis O'Leary                                  | \$20.00 |      |     |        |
| "Gateway District Towns - A Pictorial History"                                               | \$16.99 |      |     |        |
| "Chester Cookbook" - A reproduction of a 1960's-era Chester PTA cookbook                     | \$8.50  |      |     |        |
| "Entering Chester" magnets - A miniature version of the state highway signs                  | \$1.00  |      |     |        |
| "The Mystery of the Old Mine" a mystery for children by Gertrude Whitcher                    | \$10.00 |      |     |        |
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