

The Stone Cutter's Story

CONNECT

Imagine a cemetery near you. What are the three most common stones made out of? What do you know about these types of stone? When we see gravestones, we often wonder about the people in whose memory they are placed. What were their lives like? Have you ever wondered about the people who carved the stones? Consider the town of Barre, Vermont and the many stonecutters who lived there starting in the late 19th century.

Key Common Core Standards & Historical Processes

- **Key Ideas and Details** (grades 6-8) – 2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.
- **Integration of Knowledge and Ideas** (grades 9-10) – 9: Compare and contrast treatments of the same topic in several primary and secondary sources.
- **Speaking and Listening** (grades 9-10) – 1: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
- Analyzing and interpreting **secondary & primary sources**, including material culture, for information about a period and to understand the historical context.
- Interpret causality and effects, intended and unintended impacts.

WONDER

- Why did so many stonecutters in Barre, Vermont die in their forties and fifties or younger?
- Can inventions both solve problems while also creating unintended consequences?

INVESTIGATE

Students work in small groups using the **Analysis Guide** and three or four of the **primary sources**. (Note: The **Analysis Guide** offers a series of questions about each source. For a more inquiry based approach, educators may want students to generate their own questions.) Many of the sources are texts written from **interviews**, some of the sources are images (some **primary sources** will work better for specific students/groups), and some are **secondary sources** from websites online.

Students build knowledge as they work through the **primary** and **secondary sources** sequentially. The aim is for them to consider the issues from multiple perspectives, and piece together a big picture understanding of the Barre granite industry. As **forensic detectives**, students can work alone and report back to the group as they uncover answers to **WONDER** questions or work as a team. Once finished, students come together as a class to synthesize their understanding of the information and their interpretation of the **primary sources** and **secondary sources** and how, by analyzing them in the order presented in this lesson, the story of the Barre granite industry comes to life.



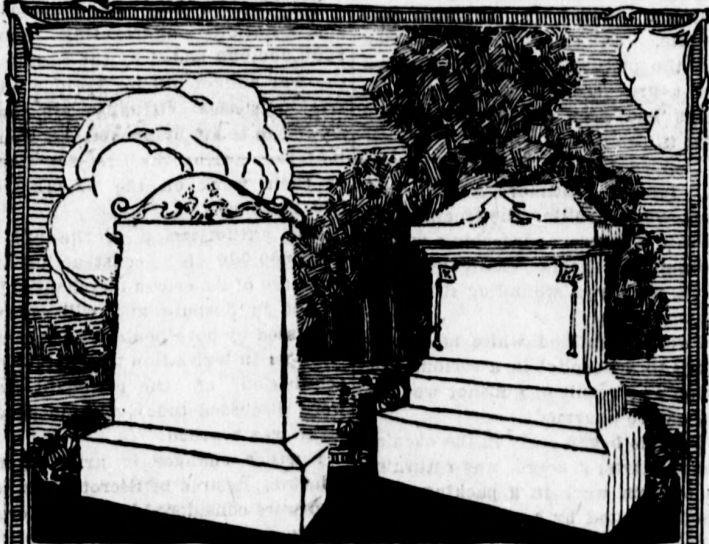
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PHOTOGRAPH: The North End Granite Plants
Barre, Vermont, c1917
Library of Congress, PAN US GEOG - Vermont no. 34 (E size)



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ADVERTISEMENT: The Logan Republican, a Utah newspaper
May 31, 1917
Library of Congress



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INTERVIEW: “Dust is Dust”

The following are notes from an interview with Generoso Bonti, a “Veteran Italian Carver”. Recorded by the **Library of Congress Federal Writers’ Project**, September 14, 1940, Section Files p. 3 & 4.

But it make no difference how strong you are sometime. Dust is dust. Not so many get sick in the old country. Always fresh air around you, no walls. No need for the sponge mask around the nose like we wear here before the machinery to suck away the dust. Bah, those mask almost choke the breath in you! I wear one five minutes, then I throw it away. If they would work here only n the summer, in the open shed like in the old country, and pay the men double, it would be fine.

INTERVIEW: Granite Worker George Tosi

The following are notes from on an interview with Elsa Tosi in 1940 about George Tosi Bonti, “The Granite Worker. Italian”. Recorded by the **Library of Congress Federal Writers’ Project**, Section Files p. 1–4.

George Tosi huddled in a loose bathrobe, his slippered feet resting on the brown earth. He drew absently at his pipe. Two men tamping and beating a narrow stretch of ground for a bocci course held his attention. . . . Two years ago George had been Barre Street champion in his favorite game of theirs that somewhat resembled bowling. Even last summer he had played. Against he doctor’s orders, for the swinging, stretching movement of the arm and the force behind it might easily tear the tender, diseased lung tissue to the point of hemorrhage. This year, for certain, the shriveled form on the stone step could no more than look on at this sport.

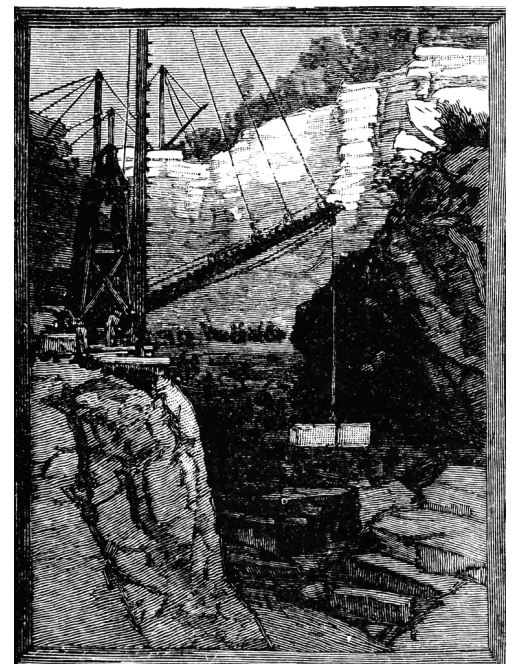
It had been his uncle who talked him into coming to Barre. It was a fast growing granite town, he said, and they paid skilled workers well. George was just thirty then; he left Elsa [his wife] in Valeano and promised to send for her the next year.

‘But you didn’t,’ Elsa interrupted. ‘It was two years and four months.’

‘That’s because I hadn’t figured it cost so much to live in America,’ George explained.

They’d come from New York to Montpelier, George explained, because his uncle had left clothes and a few possessions at a friend’s home. That first night they learned that Moore’s shed in Barre where the uncle had worked was sold. Perhaps they could have found work there. Perhaps not. The Bianchi brothers who owned a shed on River Street in Montpelier offered them both work, so they stayed here.

Yes, George disliked the granite work at first. It wasn’t like being in the open sheds in Italy where one could breath a little fresh air along with the dust. And yes, he agreed, the stone was softer over there. It contained less quartz, and therefore less harmful to the lungs.



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INTERVIEW: An Italian Shed Owner

The following are notes from on an interview with Ettore Tornazzi in 1940, "The Granite Worker. An Italian Shed Owner". Recorded by the **Library of Congress Federal Writers' Project**, Section Files p. 2.

My brother, who had come to this country two years before I did, suggested that we start a shed of our own. We did. It went under the name of Tornazzi Bros. We've had our ups and downs as every business has, but we've made money and we've put out plenty of memorials that we're proud of. Twelve years ago my brother died. Yes, it was stonecutter's T.B.

INTERVIEW: The Mayor

The following are notes from on an interview with Mayor Duncan in 1940, "The Mayor". Recorded by the **Library of Congress Federal Writers' Project**, Section Files p. 3-4.

Modern machinery came in and silicosis slaughtered family after family – through ruthlessness of big industry. The safety devices now are far from perfect. In fact it will be ten or twenty years before they are right. And they came to late to save the men who worked in the sheds before. That dust is already in their lungs... even if they leave the sheds, as many of them do, the damage is done. It will get them. Some go fast and others linger on for years.

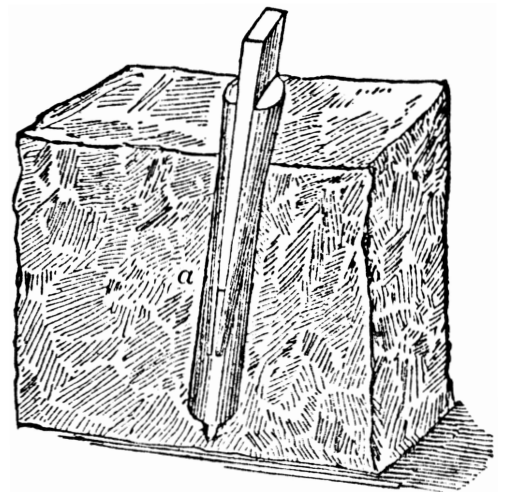
Young men today don't go into the sheds. They've seen too much of what it does to their fathers. They've seen too many funerals in the family. And they know what caused those funerals. ...Our beautiful cemeteries are full of stone cutters who died in the prime of life – the thirties and forties.

INTERVIEW: The Funeral

The following are notes from on an interview with Giacomo Coletti in 1940. Recorded by the **Library of Congress Federal Writers' Project**, Section Files p. 7 & 24.

The sheds are a grim, gray line, their wooden bellies disgorging spurts of steam as if in an effort to warm the frosted, weather-beaten bodies. ... Papa Coletti stands, his overshod feet planted firmly, and wide apart; for where he works the earth is the floor. A damp floor kept moistened to draw and hold to an impotent, underfoot mass the dread silicon particles... (p.7).

[After the funeral], [I]n a comfortable rocker sits Mario Bassi. He is a skilled cutter, convalescing these three months from pneumonia which has left his silicon invaded lungs weak and sick. He coughs. An undercurrent of tenseness sweeps through the room. Each cannot but ask himself in grim secrecy: will Mario be the next whose life is to be shortened? Will I? But neither by look nor word do they betray their emotion (p. 24).



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**PHOTOGRAPH OF STATUE: Brusa Memorial
Hope Cemetery, in Barre, Vermont, 1937
Andrea Halnon**

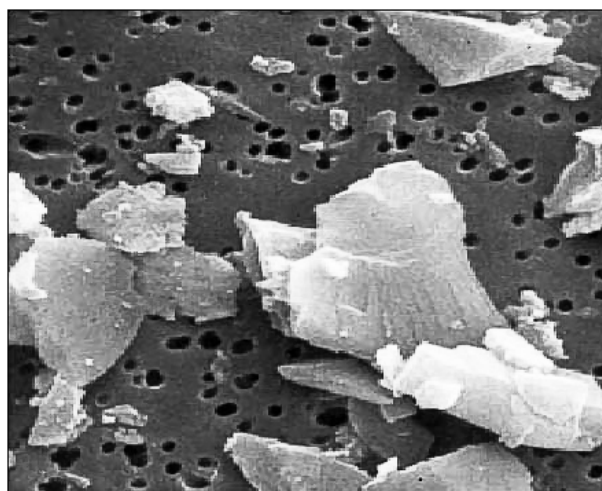


As Brusa was dying, he designed his own memorial as a message to society about the stonecutters' plight.

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SECONDARY SOURCE: Photograph & Description of Silica Particles in the Lung

Detailed microscopic view of silica particles on a filter taken with a scanning electron micrograph by William Jones, Ph.D. (<http://elcosh.org/document/2155/d000048/silicosis-in-sandblasters%3A-a-case-study-adapted-for-use-in-u.s.-high-schools.html>).



The following is text from the article *Silicosis in Sandblasters: A Case Study Adapted for Use in U.S. High Schools*:

When workers inhale crystalline silica, the lung develops scar tissue around the silica particles. This process results in a lung disease known as silicosis. As more lung tissue is damaged by silica dust, breathing becomes more difficult, chest pain occurs, and death may result. Silicosis patients suffer shortness of breath, fever, and cyanosis. Some patients are diagnosed incorrectly as having pulmonary edema, pneumonia, or other lung diseases.

At the turn of the 20th century in Vermont, USA, introduction of pneumatic tools to the granite cutting industry was followed by a dramatic rise in death rate from silicosis. (Pneumatic tools generated much larger quantities of free crystalline silica-containing dust.) In the late 1930s, dust control measures were introduced and the number of new cases of disease gradually decreased, until there were virtually none by 1967.

Reference: Electronic Library of Construction Occupational Safety & Health. (2013). Silicosis in sandblasters: A case study adapted for use in U.S. high schools. Retrieved October 15, 2013, from <http://elcosh.org/document/2155/d000048/silicosis-in-sandblasters%3A-a-case-study-adapted-for-use-in-u.s.-high-schools.html>

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SECONDARY SOURCE: Photograph & Description of Healthy and Silica Damaged Lung
X-ray of health lung and lung damaged by silica exposure (<http://social.dol.gov/blog/a-long-overdue-proposal/>).



CONSTRUCT

Based on the documents, have students share what they think working conditions were like for stonecutters. Invite students to draw a Venn diagram in their **Forensic Notebooks** that compare and contrast the working environment for stonecutters in Italy and in Barre, Vermont. Under the diagram, they can answer the following questions:

- What concerns come to mind about the health of the stonecutters?
- Did the stonecutter's actually suffer from tuberculosis?
- Why do you think people called their lung condition "stonecutter's TB"?
 - Who benefits from workers thinking their condition is TB instead of silicosis?
 - Who does not benefit?

As lungs are exposed to damaging particles like silica, the body responds by developing thick, stiff scarring deep within the lobes of the lungs. Unfortunately scar tissue cannot stretch as a person breathes. To picture this, have students make a working model of the lung using a plastic soda bottle, a balloon, a rubber band, and a plastic grocery bag. Encourage them to mess around with the materials.

- If a hint is needed have them stretch a balloon over the neck of a plastic bottle and replace the bottom with a piece of the plastic bag secured by a rubber band.
- If more hints are needed, check out this demo online: <http://www.youtube.com/watch?v=vRv2zYH5p9k>

Ask students to draw a diagram of their model in their **Forensic Notebooks** and sketch the movement of air molecules.

- Hint: air moves from areas of high pressure (outside the lung) to flood areas of lower pressure (inside

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the lung). As the diaphragm moves down, the lung expands and air moves from high to low until it equalizes. As the diaphragm releases, the air is forced out back into the room atmosphere.

Now, have the students “scar” the lung with pieces of tape and have them explain how the lung is encumbered when tissues are damaged.

EXPRESS

Pneumatic tools were an invention of the 1890s and 1900s and were intended to make cutting stone easier. The unintended consequence of this innovation was to produce even more dust made up of even smaller particles of silica. As a class, discuss other innovations, past and present, which also led to unintended, negative consequences such as the cotton gin, trains, and text messaging (perhaps in the context of driving).

The ventilator was invented in the 1930s to solve the problem of silicosis. Consider your earlier conversation about unintended consequences. Have students choose a 20th or 21st century invention that solves a workplace problem that was an unintended result of an innovation. Some examples include smoke stack scrubbers for coal plants, hazardous waste containers in hospitals to dispose of medical needles, and catalytic converters to reduce the levels of pollution created by automobiles.

REFLECT

Have each student choose one of the following questions to reflect on in their **Forensic Notebooks**. Students can then share their ideas about the various questions within a whole-group discussion. Alternatively, choose one of these topics to discuss in-depth within a whole group Socratic Circle.

- Why do you suppose people stayed to work in such dangerous conditions?
- How does this compare to situations encountered by coal miners or cotton mill workers?
- Have you ever been in a situation that was potentially unhealthy? Did you use safety equipment? Why or why not?
- What is OSHA? What problems does it try to address? What do you think its strengths and weaknesses are?
- In your opinion, when does worker safety go from being a personal problem to a business-wide, state-wide, or even federal level problem to solve?

FINAL ASSESSMENT

Have the students imagine that it is 1910 and they work in a granite shed in Barre, Vermont. They can respond to one of the following writing prompts which can be assessed using the rubric at the end of this lesson.

1. You have gotten a letter from a relative in Italy complaining that there are too many skilled stonemasons there and not enough jobs to go around. Write a letter in response that clearly describes the pros and cons of coming to America to work in Barre. After describing the details of daily life, offer some advice to your relative. Be sure to address your thoughts about working with the new pneumatic drill.
2. You own a granite shed and need to make a living in the industry. Record (written or audio-recording) a conversation that might have occurred between you and one of your employees. Make sure to represent the interests of both the worker and the shed owner. You, as the shed owner, are excited about the new pneumatic drill and the possibilities it offers for making work easier and quicker for your workers.



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Final Assessment Rubric		
Student Name:	Scoring (0-3) 0-1 Did not show evidence 1-2 Met expectations 2-3 Exceeded expectations	
Requirements	Score	Comments
Uses the appropriate format and writing conventions for either writing a letter or creating a dialogue.		
Accurately includes information gathered from at least 5 of the primary sources.		
Presents multiple perspectives regarding granite sheds as a place of work (i.e. good paycheck but unhealthy work conditions).		
Addresses the question of why so many stonecutters in Barre, Vermont died young.		
Addresses the complicated issue of how an invention can both solve problems while also creating unintended consequences.		

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Analysis Guide

Use this chart to analyze the primary sources. Use the information cumulatively to create a big picture of what working conditions were like for stonecutters in Vermont.

PRIMARY SOURCE	What information does this primary source offer about working conditions for granite stonecutters?
<p>PHOTOGRAPH: The North End Granite Plants Describe the building. Are there windows? Do you think granite was carved year around?</p>	
<p>ADVERTISEMENT: The Logan Republican, a Utah newspaper Where is this stone company? What does this ad imply about the size of the Vermont Barre Granite market? Do you think stone cutting was a large-scale or small business?</p>	
<p>INTERVIEW: "Dust is Dust" What are some of the differences between working with granite in Italy and in Barre?</p>	
<p>INTERVIEW: Granite Worker George Tosi Was cutting stone a desirable job? What are some of the differences between the granite quarried in Italy and the granite quarried in Vermont? Describe Tosi's physical condition. How does this effect his daily life?</p>	
<p>INTERVIEW: An Italian Shed Owner Was the granite industry a good business? What do you think he meant by "stonecutter's TB"?</p>	

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Analysis Guide Page II

Use this chart to analyze the primary sources. Use the information cumulatively to create a big picture of what working conditions were like for stonecutters in Vermont.

PRIMARY SOURCE	What information does this primary source offer about working conditions for granite stonecutters?
<p>INTERVIEW: The Mayor When did this interview take place? Stone was originally carved by hand with chisels. What “modern machinery” do you think Mayor Duncan was referring to? Were health issues infrequent and isolated events?</p>	
<p>INTERVIEW: The Funeral Describe the working environment in the sheds. Are the workers aware of the health risks they face?</p>	
<p>PHOTOGRAPH OF STATUE: Brusa Memorial Describe the memorial. What message do you think Brusa was trying to convey? Who do you think was the intended audience? What sort of events/people get memorialized?</p>	
<p>SECONDARY SOURCE: Photograph & Description of Silica Particles in the Lung How do silica particles affect the lungs? How might stone cutters have benefitted from pneumatic tools? What was an unintended consequence of these tools?</p>	
<p>SECONDARY SOURCE: Photograph & Description of Healthy and Silica Damaged Lung Describe the difference between the two x-rays.</p>	