

James Hutton (1726–1797)

James Hutton was born in Scotland. As a boy, he loved science. In those days, the work a boy would do as a man was often chosen for him. Hutton became an apprentice to a lawyer. An apprentice is someone who is trained to do a job by someone who is experienced in that job. Luckily for Hutton, his employer realized that law wasn't what Hutton wanted. He let Hutton leave to study science.

Hutton studied chemistry with the idea of becoming a doctor. At that time, there was no such thing as geology. He finished his studies and became a doctor. When he could not find work, luck was with him again. He inherited a small farm. That would change his life.

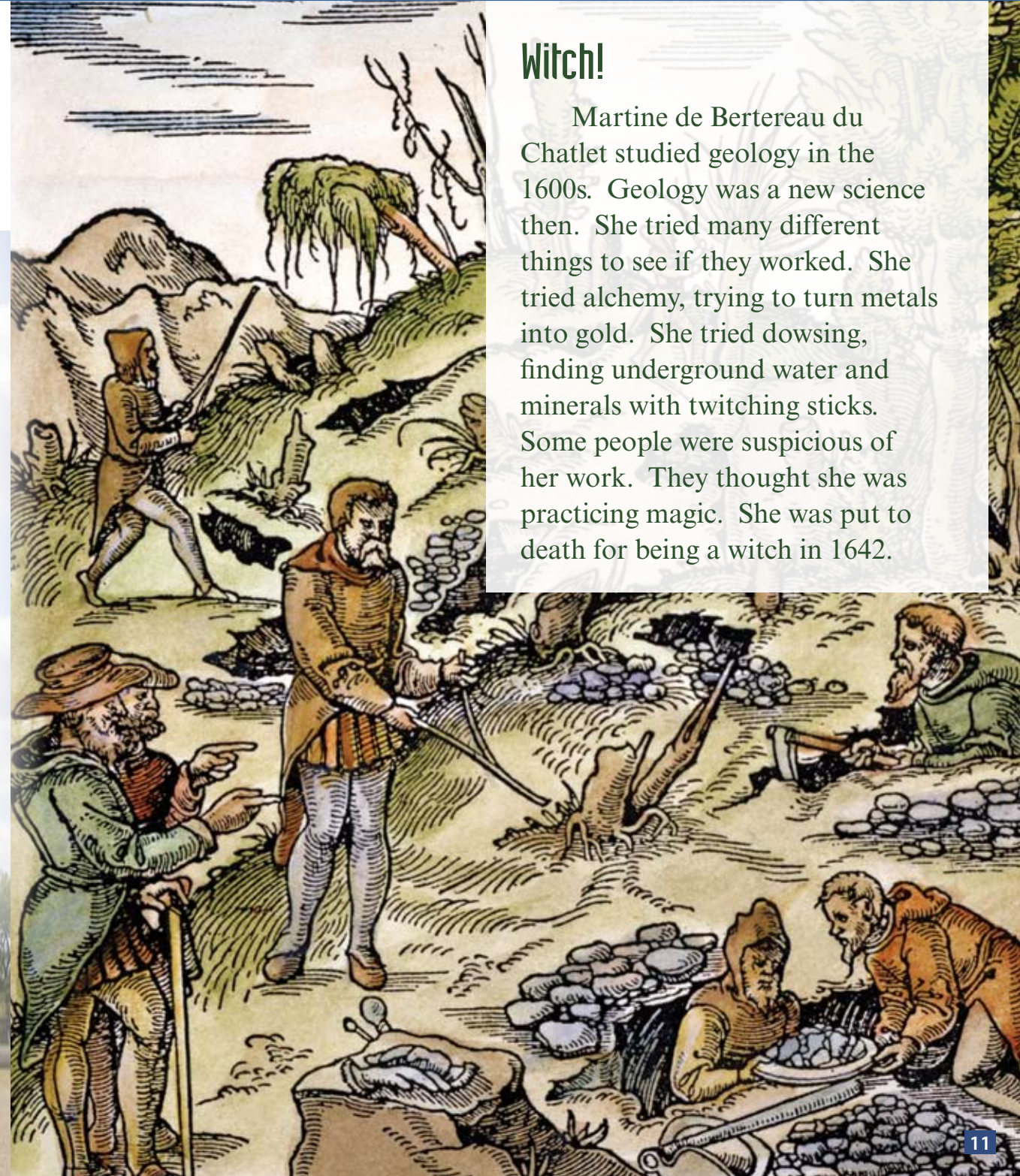
On the farm and in his travels, Hutton began to study Earth's surface. He worked hard to make his farm successful. When it was successful enough, he began to spend nearly all his time studying the land and rocks around him.

Family Life

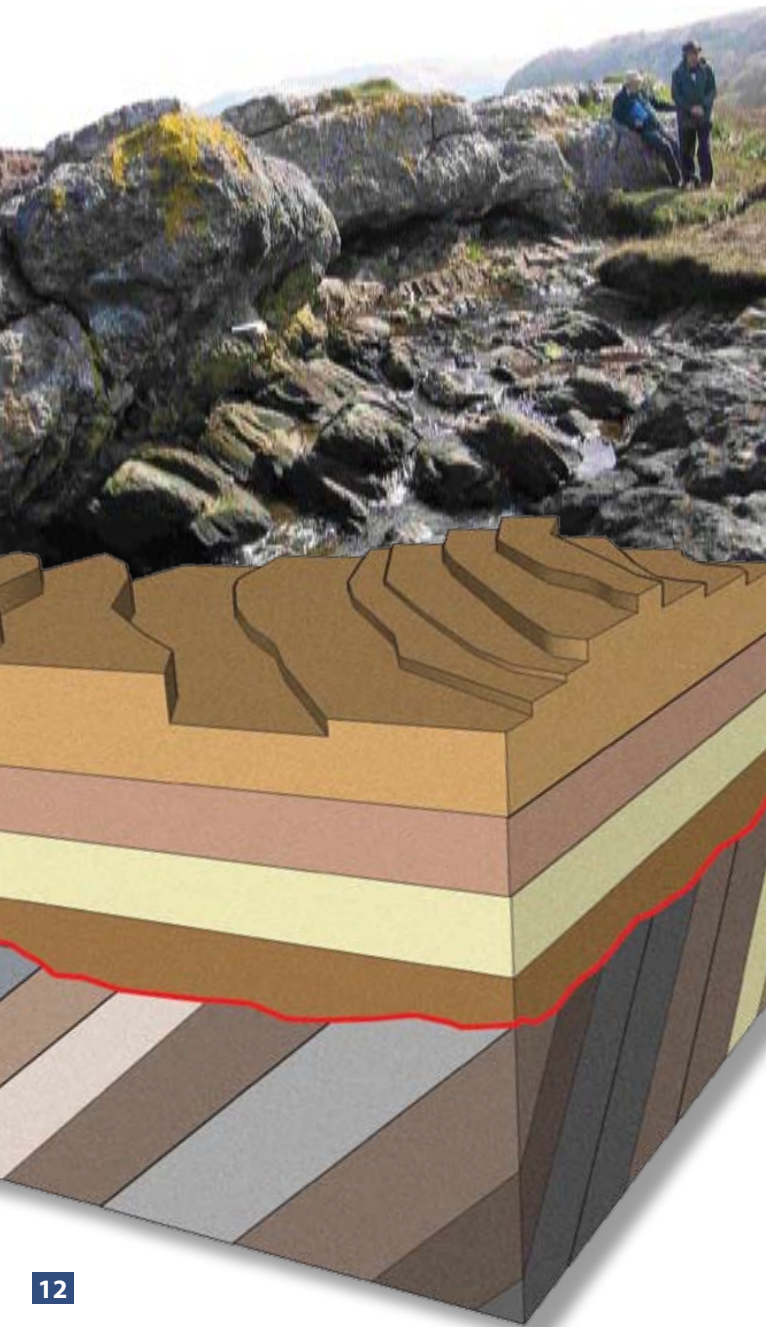
Hutton never married. He lived on his farm with his three sisters.

Witch!

Martine de Bertereau du Chatlet studied geology in the 1600s. Geology was a new science then. She tried many different things to see if they worked. She tried alchemy, trying to turn metals into gold. She tried dowsing, finding underground water and minerals with twitching sticks. Some people were suspicious of her work. They thought she was practicing magic. She was put to death for being a witch in 1642.



Hutton had questions about what he saw. How did the land come to be this way? How old were the rocks? What formed them? He knew there had to be answers to his questions.



However, it wasn't always easy to find the answers. He couldn't turn to books because there wasn't much written about the earth. He couldn't turn to other scientists because very few were studying the earth. He had to figure things out for himself. He did this mainly through observing and thinking. In this way, he was able to come up with many answers, and he was often right. He thought that forces inside Earth caused by heat could raise mountains. He also thought that the forces of nature had an effect on

← Hutton's Unconformity at Siccar Point in Scotland is shown in the photo above. An underground unconformity is shown in the diagram.

mountains, including water deposits, volcanoes, and more. He believed this had been happening for millions of years.

Many people did not agree with Hutton. His ideas went against the common beliefs. But this did not stop him. His ideas explained much of what people saw on Earth. Hutton's new ideas soon replaced the old ones. In time, he wrote a book called *The Theory of the Earth*. This book became the basis for modern geology. He is responsible for the rule that states, "The present is the key to the past." In his own words, James Hutton said, "The past history of our globe must be explained by what can be seen to be happening now." Hutton figured out so much that his book is over two thousand pages long!



Catastrophe!

In Hutton's time, **catastrophism** was the main belief. It says that Earth was shaped through major catastrophes. They were terrible disasters like floods and fires. Many scientists believed that this was true. Hutton didn't agree with them.