



## Related Reading - Mineral Identification

From the 4th century B.C.E. to the 16th century C.E., science relied on the Ancient Greek philosopher Aristotle's explanation of how minerals were formed. According to Aristotle, all the material in the world was composed of four basic elements: earth, air, fire, and water.

In his writing, Aristotle explained that heat from the sun caused the earth to emit two kinds of "exhalations:" water vapor and a mysterious exhalation that was hot, dry, smoky, and prone to combustion. When these two "exhalations" became trapped within the earth, the vaporous kind produced metals, and the smoky kind produced minerals.

This theory held until 1527, when a young German intellectual named **Georg Bauer** (pictured) took a job as a physician in a mining town in the present-day Czech Republic. Bauer was fascinated by what he observed, and he spent the next six years of his life investigating mines and coming up with new theories of geology and mineralogy.



After long, Bauer began publishing works under the Latin name **Georgius Agricola** ("Bauer" and "Agricola" both mean "farmer"). His books revolutionized the field of geology; they criticized the theories of Aristotle, classified dozens of minerals based on their physical properties, and laid the groundwork for a new form of geology based on rigorous observation.

His masterwork, published a year after his 1555 death, was called *De Res Metallica*, and it remained a valuable resource on mining, metallurgy, and mineralogy for hundreds of years. Because of his contributions, Agricola is often referred to as the "father of mineralogy."