

## Age Dating Cinder Cone

In 1851, two gold prospectors claimed to have observed an erupting volcano and said that they walked 10 miles over rocks so hot their boots were destroyed. The first attempt to place an age on Cinder Cone was by H.W. Harkness, a medical doctor, who in 1875 noted the cone's apparent youthfulness and after taking careful notes, suggested that it was about 25 years old. In the 1890s Joseph S. Diller of the U.S. Geological Survey became the first geologist to study Cinder Cone. After making careful observations and interviewing people who claimed to have witnessed the 1851 eruption, he concluded that the eruption occurred between A.D. 1675 and 1700. His conclusions were based on three lines of evidence: (1) fully mature willows growing on the crater rim, (2) 200-year old pine trees growing in volcanic ash, and (3) the oldest trees growing on lava related to the eruption were about 150 years old.

In an attempt to improve on Diller's work, U.S. Geological Survey volcanologist R.H. Finch studied Cinder Cone in the mid-1930s. On the basis of this study and earlier studies by Diller and others, Finch arrived at the following conclusions: (1) there were five separate lava flow events, (2) the youngest lava flow was erupted in 1851, and (3) there were at least two tephra eruptions. By combining dates from tree rings with his earlier conclusions, he proposed that Cinder Cone was active for about 315 years. According to Finch, the explosive eruptions occurred in 1567 and 1666, and the lava flows were erupted in 1567, 1666, 1720, 1785, and 1851.