2024 History Essay Contest
Homeschool 4th Grade Winner

Ashfall Fossil Beds

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One day about 12 million years ago, a supervolcano in Idaho erupted sending ash flying into the air. The ash traveled 1,000 miles to Nebraska which at that time was a savanna full of life. There were rhinos, horses, camels, giant tortoises, wild dogs, birds and many other animals. Several were at the watering hole to drink, bath, and find food. Suddenly big black clouds of ash rolled in blocking out the sun. The ash started falling down in clusters covering the plants and animals. It created Ashfall Fossil Beds in northeast Nebraska. It is the only fossil formation created completely by fallen ash.

The volcano that erupted is named Yellowstone. It is a supervolcano which means it is more powerful than a regular volcano. For example, one of Yellowstone's eruptions 2.1 million years ago was about 6,000 times bigger than Mount St. Helen's in 1980. About 14-16 million years ago, Yellowstone was on the border of Oregon, Nevada, and Idaho. When Yellowstone erupted 12 million years ago, it was in Idaho and is called the Bruneau-Jarbidge supervolcano. The volcano itself is not really moving. What is happening is earth is sliding over the magma plume which feeds the volcano. Earth's plates moved causing the volcano to now rest under Wyoming.

When the ash from Yellowstone fell, the animals inhaled it causing the sharp ash pieces to fill and cut their lungs. Smaller animals like turtles and birds lived only a few hours or days. They were the first

to die because the ash that they inhaled quickly clogged up their smaller lungs. This is why the bottom layer of Ashfall Fossil Beds has smaller animals. The middle-sized animals with bigger lungs such as the horses and small camels died next. They lived weeks longer and breathed in more ash so their bones show an unusual growth called Marie's Disease. These animals are in the middle section of Ashfall. Finally, came the Teleoceras rhinos. Even though they were the biggest and strongest of the animals at the watering hole, they too eventually died from the ash and were buried with the other animals. Like the horses and camels, the rhinos' bones have Marie's Disease. Since the rhinos died last, they are on the top layer of the fossil beds. In all about 8-10 inches of ash fell on the watering hole. The ash from Yellowstone preserved the fossils making Ashfall the only fossil bed on earth made entirely from fallen ash.

Over the millions of years, weathering and erosion washed away ash and slowly uncovered the rhino bones. In 1971, paleontologist Michael Voorhies was in a ravine near Royal, Nebraska. He was exploring it after a recent rainstorm when he noticed a white bone sticking out of some ash. So, he went over to check it out and found it was a baby rhino skull. Since then, almost 200 complete mammal skeletons have been uncovered. One hundred of them are rhinos probably from many small herds. The fossils were preserved so well that scientist can now tell the difference between male and female rhinos. Males are the bigger ones with larger lower tusks. Most of the rhinos found are females with a few of them even pregnant. Some of the rhinos have food that had turned into a fossil in their mouth or stomach.

In 1986, the Nebraska Game and Parks bought the fossil site. Then in 1991, it became Ashfall Fossil Beds Historical Park. It was declared a National Natural Landmark in 2006. Finally in 2009, the Hubbard Rhino Barn opened which protects the fossils from damage. You can go into the Hubbard Rhino Barn and see fossil skeletons still slightly covered in ash and paleontologist at work uncovering the animals.

Today when visitors explore northeast Nebraska, they will not see a savanna full of rhinos, horses, camels, or wild dogs roaming around the watering hole like they would have 12 million years ago. Instead, they will discover the fossils of these animals frozen in ash from the supervolcano Yellowstone.

Ashfall Fossil Beds, the only fossil formation created completely by fallen ash, is an extraordinary paleontological site, that will amaze all visitors.

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