# Civil War sites are more than just battlefields

By William L. Spence of the Tribune The Lewiston Tribune | 1 comment

It was 148 years ago, on three hot days in July, when the turning point in the Civil War came during the Battle of Gettysburg.

That epic contest would surely be remembered regardless, but President Lincoln helped cement it in the national consciousness with his famous Gettysburg Address - delivered seven score and eight years ago this Saturday.

I had my first encounter with that small Pennsylvania town two score years ago, when my parents dragged their unenthusiastic children through every Civil War battlefield in a six-state region.

Later in life I lived about 20 miles west of Gettysburg, along the route Confederate forces followed on their march toward destiny. But it wasn't until I became interested in geology that I discovered the battle that preserved the Union was fought on rocks that tore a supercontinent apart.

Every Civil War enthusiast has heard of Cemetery Ridge, Little Round Top and the huge boulder maze of Devil's Den. They were the horrific killing grounds where Union forces held firm and turned the Rebel tide - and each of them, all the bedrock throughout the Gettysburg Basin, is made up of rock that formed during the breakup of Pangea.

Pangea was the ultimate geological union. At its peak 230 million years ago, it included every continent on Earth. North America, Europe, Africa and South America butted against each other to form its core, while Antarctica, Asia and Australia were attached along the margins.

Had humans been present at the time, they could have strolled from Virginia to Morocco, crossing a desert landscape similar to the American Southwest today. These Triassic "red bed" deposits subsequently lithified, creating the famous brownstone that was quarried for homes in Boston and New York.

Shortly thereafter, Pangea began to break apart. Rift basins formed throughout its interior, along the line of what would eventually become the Atlantic Ocean. The crust thinned and ruptured, providing avenues for magma to rise to the surface. Beginning about 201 million years ago, the Central Atlantic Magmatic Province erupted.

Now considered by many geologists to be the largest igneous province in the world, the true extent of CAMP has only been recognized in the last 15 years or so. Its flood basalts and feeder dikes have been found across 10 million square kilometers on four continents,

from France, Spain and Morocco to the Amazon Basin and all along the eastern coast of North America - including at Gettysburg.

Devil's Den, Cemetery Ridge and Little Round Top are all comprised of diabase, the frozen underground remains of CAMP flood basalts. Similar to the Columbia River basalts found along the lower Snake River and throughout the Columbia Plateau, the CAMP eruptions were unlike anything ever seen in human history. Sheets of magma more than a mile high and tens of miles long would have poured out rivers of lava, forming flows hundreds of feet thick and hundreds of miles long.

By some estimates, CAMP emplaced more than 2 million cubic kilometers of lava in less than a million years, almost all of which has since eroded. It was the beginning of the end for Pangea. The first oceanic crust welled up 20 million years later, forming the nascent Atlantic Ocean. Another nine score million years after that, Washington, D.C., was no longer the center of the known world.

It seems altogether fitting and proper that Union forces stood their ground on these hard rocks. They fought for a noble cause, a concept of unity. By their strength and commitment, they rejected efforts to further divide the nation and set a standard of devotion that is surely worth remembering 148 years later.

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