

Geologist: Blue Ridge still rising

That's why mountains haven't eroded, he says

By JACK HORAN
Outdoors Editor

Hold on to your hiking sticks. The Blue Ridge Mountains are rising.

So says a federal scientist, who estimates the growth is slight, 100 feet every million years, so subtle that it can't be seen.

But it's enough to offset erosion and keep Mount Mitchell, elevation 6,684 feet, from becoming Mitchell Hill, elevation 668.

The explanation put forth by Dr. David Prowell of the U.S. Geological Survey in Atlanta would explain why erosion hasn't reduced the Blue Ridge to the elevation of the Piedmont. This discrepancy has puzzled geologists because the mountains and Piedmont are made from the same types of rocks.

The Blue Ridge cuts through Virginia, the Carolinas and Georgia as part of the Appalachian mountain chain. Geologists have long believed the Appalachians formed 250 million to 300 million years ago when Africa slammed into North America. The violent collision buckled the land and thrust it upward.

Prowell says, however, that the Appalachians aren't ancient but are relatively young. He contends the original mountains washed down to nothing long ago and what we see now is Appalachians II, formed 140 million years back. The uplift that began then continues today.

The research scientist says a westward crawl of a continental plate is nudging the mountains upward.

Prowell, 51, has been advancing his hypothesis and supporting evidence to sometimes skeptical geologists for two decades.

"Twenty years ago, I would have almost been booted off the stage," he said. "Now, I pack rooms wherever I go."

Last March, he put forth his explanation at the Geological Society of America's Southeastern section meeting in Charleston. In April, Prowell will help lead a symposium on the subject of uplift at the society's annual meeting in Raleigh.

He still has key evidence to collect, including the rate of lift. He said he's writing a paper for a scientific journal. This is his first media discussion of the subject.

Dr. James Knapp at the University of South Carolina said Prowell's explanation "is a very credible hypothesis." He said it's not widely accepted because "people haven't paid attention to it."

Other geologists, looking at the Blue Ridge, have wondered why the mountains still tower above the Piedmont. Without growth to offset erosion, mountains weather away to nothing in 50 million years, regardless of height. Some have speculated the mountains keep their height because of a kind of rebound. As the weight from the peaks erodes away, the crust under the mountains floats higher.

"They (the mountains) should not be as high as they are today," said Dr. Andy Bobyarchick, an associate professor of earth sciences at UNC Charlotte who knows Prowell.

Bobyarchick said geologists noticed the changes in elevation - a millimeter or two - during a 1970s survey. The findings got little attention because the geologists

didn't know whether they were seeing actual increases in elevation or instrument errors.

"The idea was out there before Dave got to thinking," he said of Prowell. "What he has done is take a lot of field observations and put them into a model."

Prowell, a 26-year employee of the geological survey, believes the slow-motion advance of the North American plate is lifting the Blue Ridge as well as the rest of the Appalachians and the Piedmont.

As the plate grinds westward, it compresses the softer rock under the Appalachians against an ancient land mass bounded by a line from Alabama to New York. This vise-like action shoves the mountains upward as well as outward toward Mississippi. The mountains rise more than the Piedmont, he said, much as a finger pressing a sheet of paper from below pushes the middle higher than the edges.

The relatively young, 140-million-year-old Appalachians, Prowell argues, consist of quarter-billion-year-old rocks, misleading geologists into thinking they're ancient.

Read the article and answer the questions in complete sentences on your own paper.

1. What is the title of the article?
2. What is the sub title of the article?
3. Who is the author of the article?
4. Which mountains is the article about?
5. Why would this be of interest us?
6. How much are the mountains growing each year?
7. Mt. Mitchell is the tallest mountain east of the Mississippi, how tall is it?
8. When did the Appalachian Mountain chain form?
9. Explain what happen to the land to form these mountains.
10. Does Dr. Prowell think the Appalachians are ancient or young?
11. Why?
12. Is Dr. Prowell's theory fact or hypothesis?
13. Where does Dr. Bobyarchick work?
14. Dr. Prowell has been working with the geological survey for over 26 years. What is his explanation for his theory?

STYLING THE BLUE RIDGE

This graphic shows geologist David Prowell's hypothesis of why the Blue Ridge is rising.

