But Jesus answered, “I tell you, if these [his followers] become silent, the stones will cry out!” Luke 19:40

We must speak for silence would shame us, and the rocks themselves would cry out... You, O Lord Christ Jesus, must be praised for who You are in the world You have made.

Hello! The latest science is full of new findings that show that God, in the person of Jesus, is Creator of the universe, you and us. Thank you for joining us in learning the Good News.

You will find technical references for our articles at:
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Car-RT-Sort
Postal Customer

As some of you know, the author of this newsletter has been involved in research in the Coconino Formation, particularly in Sedona. While researching the Coconino, some amazing discoveries were also made in the Schnebly Hill Formation (actually in several formations). Geological features never before mentioned in any papers or books, not even Sedona Through Time, by Wayne Ranney, were discovered by the author. Over the next few issues, we will show you that what you think about Sedona geology is mostly incorrect. We will support that statement with photos, data and references to published papers in the field of geology. We’re gonna have fun!

Special Sedona Geology Series

Introduction

In 2010, while hiking on the Mushroom Trail (an unofficial trail not maintained by the Forest Service) I discovered features in the Coconino that are impossible to occur unless the Coconino was deposited rapidly in water. On the way up that same trail, is evidence of an earthquake in the Sedona area. Over the next several issues, I will explain the features I found in detail, hopefully without bogging you down in detail. The features discovered can only be interpreted if one searches the professional geology literature on sedimentary geology, which I have done, reading nearly 90 published papers that relate to the discoveries. Hopefully you will enjoy the journey as much as I have. Sedona is home to some unique, beautiful and telling geology.
Before we get started on the Sedona story, we need to take a brief look at the history of geologic discovery.

Before the 1700s, intellectuals were primarily Christian in worldview in the Western World. During late the 1700s, the so-called Enlightenment period started with folks like David Hume making arguments for materialism, the belief that matter, energy and laws of nature can explain everything... That there is no supernatural... You know, like no such thing as God. In the late 1700s, James Hutton wrote a book promoting uniformitarianism in geology. He is credited with the idea that The Present is the Key to be Past. Together the ideas of uniformitarianism and the Key to the Past made the assumption that by observing the geological processes we see in the present, we can explain all geological formations and geological history.

Hutton's ideas were mostly overlooked by geologists. Until the early 1800s, geologists interpreted the geology of the world, particularly the sedimentary rock strata, as being the result of Noah's Flood. But in 1830 and 1833, Charles Lyell published his three volume set, Principles of Geology. Hutton's ideas were the focus of the book and uniformitarianism quickly became the accepted underlying principle of geology. The Present is the Key to be Past was now required for all geologic interpretations. UC at Berkeley puts it like this on a web page (you can link to our citations on our website home page). Lyell wanted to find a way to make geology a true science of its own, built on observation and not susceptible to wild speculations or dependent on the supernatural. The web page is correct in one point. As Lyell stated in several letters to friends his goal was to "remove Moses from geology. Lyell was a deist but did not like the God of the Bible. But, famous Harvard Geologist and materialist Stephen Jay Gould stated: "...I disagree with his deductions about the method of working the results..."

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Wind does an excellent job of sorting. As the wind begins to blow, it is able to pick up and move the smallest grains through the air. The larger grains are too heavy to lift. Those small grains are then deposited as the wind dies down farther to the south. Slightly larger grains are rolled across the surface. As wind speed increases, heavier grains are picked up and moved through the air to be deposited on top of the smaller grains. The net result is whether thick or thin, large area or small area, wind driven sand should form very distinct layers of different size grains of sand. It is widely reported that the Coconino is well sorted. That would be good evidence to support a wind deposition because that is exactly what we find in today’s sand dunes. Our team made over 100 thin-sections of the Coconino.

To make a thin-section, a small sample of rock is taken. The sample is 1 to 2 inches across in width, height and depth. It is marked so the original orientation is recorded. The sample is put in a pressure chamber and epoxy is forced into all the open pore space in the rock. It is then cut to 60 millionths of an inch thick. That slice is then polished to 30 millionths of an inch thick. Light will now shine through it so we can look at it under a microscope. Here are several thin sections:

What do you notice. That’s right! There are not layers of different size sand grains. They are all mixed together. They are NOT sorted. Why do web sites, books and even published papers state that the Coconino is well-sorted? Simple. It is assumed that the Coconino is wind deposited and every geologist knows that wind deposited sand dunes are well sorted. Nobody bothered to look through a microscope!

Now, to their credit, they did look at it through a field lens. I too have looked at the Coconino through a field lens and son-of-a-gun, it usually looks pretty well sorted. But that is because a field glass magnifies only enough to see the larger grains, but not enough to see the smaller grains. Lack of sorting is evidence supporting underwater deposition. So, the second major argument for the Coconino being wind deposited is based on assumption and an observation system (field glass) lacking in the ability to actually determine the data. The lack of good sorting supports underwater deposition.

Naturalists proclaim that the Coconino is well-rounded. That is what one would expect after the grains have been blasted into each other in the wind. Once again, a field glass doesn’t magnify well enough and no papers were found where the geologist actually observed the roundness. It appears the roundness was simply assumed because, after all, everybody knows the Coconino was deposited as sand dunes. But another look at thin sections and through an electron microscope over-rules the assumption. The Coconino sand grains are sub-rounded to sub-angular. Lack of roundedness tends to favor water deposition AND the idea that the grains were never transported long distances by wind before deposition. A detailed look at the Coconino grains supports underwater deposition of the Coconino.

Grain Size Distribution

The chart below shows the results of a study by naturalist Glen Visher. Visher concluded that the Coconino was water deposited, primarily because of grain size distribution. The chart is looking at the various sizes of grains and the percentage of that size in the sample. The important thing to note is that Modern sand dunes have a fairly even distribution of size, which is indicated by the straightness of the sand dune line on the graph. On the other hand, known water deposited sand and the Coconino Sandstone have rather crooked lines.

We must confess that we are not too impressed by the methodology of obtaining the grain distribution of sandstone. The rock is “carefully” crushed to get individual grains. Then the grains are sized by passing them through sieves. It was the best technique at the time, but is subject to problems in the “crushing” process. Analysis of grain size in our thin sections show that Visher actually got fairly accurate results.

Are you having fun? We find scientific discovery through research to be fascinating and a lot of fun. Next month we will conclude our investigating of the Coconino Formation and begin looking at other formations in the Sedona area. Just to whet your appetite, we’ll look at frost. Supposed frosting of the Coconino grains supports wind deposition. Look closely at the photos in the column to the left. See lots of scratches and pits?

What does the research, using the scientific method, support? God, in the person of Jesus, brought the judgment of Noah’s Flood on His creation because of man’s evil, with the resulting beauty of the rocks of Sedona, rocks that cry out about the glory of God! CRM