How Stone Mountain Was Created

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How Stone Mount

By POOLE MAY

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The Story of the Divine Formation of the Was Conceived In Volcanic Heat, For Below the Surface of the Ean Marvel and Admire

Mr. Maynard herewith describes, for the first time, the true scientific story of the which, in ages so distant that it was before the dawn of history, a volcanic disturbance upward and how the pressure above made of the mass the crystalline rock we know away until today Stone Mountain, practically impervious to the elements, stands high "Stone Mountain had passed through millions of years of its life history before the Pyramids at the Himalayas were conceived, millions of years before the atmosphere was created."

It is a fascinating story and one that every Georgian should read. For even that nature has placed within this state.

INTRODUCTION

The mother had an opportunity during the year 1921 to make a detailed study of all the rock formations in DeKalb County, Georgia, in which county Stone Mountain is located. Eight months were spent in field work in determining the geologic formations; studying their physical, chemical and microscopical characteristics; working out the sequence of the formations which consist of rocks of those of the oldest known geologic age of molten origin to those of Cambrian time when life developed in the ancient oceans to a fairly advanced stage.

Viewing these rocks was like looking at the pages of a book, with the book standing on end, for the rocks of the Stone Mountain area were all standing up at a high angle due to the fact that they had been folded due to the great pressure which they have been subjected from time to time. No section of the world's rocks is more intricate in its folding; no rock structures are more difficult to untangle; no section of the world has been subjected to greater metamorphosis than have the rocks of the Stone Mountain District.

We are able to turn over the leaves of rock which has fallen just as the leaves fall from the binding of an old book, due to the faulting of the rocks, namely their slipping because of folding and earthquakes, because of stream erosion which has cut through the soils and upper layers of decomposed rocks.

In this great complex of rocks, the most striking geologic and physical feature is Stone Mountain which has shot up from a deep seated magma, on up through this great book of rocks, unlike anything, anywhere.

STONE MOUNTAIN, a huge granite dome situated sixteen miles east of Atlanta, stands nearly two thousand feet above sea level and nearly eight hundred feet above its surrounding plateau. It measures more than a mile in circumference at its base, with nearly twenty-five million square feet of exposed granite. It is the most prominent geologic phenomenon in the United States east of the Rockies and surpasses anything of its kind yet known in granite. This great grey granite mass is elliptical in shape, with its longest axis extending east and west, oriented by nature to conform to the oldest known geometrical art. Its steepest side a sheer precipice, bulges forward near the center and faces northward and so cut it is better savored in solid granite the greatest memorial to the Confederacy.

The complex rocks of the Stone Mountain District form a part of the oldest rocks known in geologic time, which rose from the sea and extended from southwestern Alabama trending northeast through Georgia, the Carolinas, Virginia and Maryland. The same area now known as the Piedmont Plateau and extending well up into Canada. Plate I represents these complex rocks rising to a height of ten thousand feet above Atlanta and in this group of complex rocks, rocks at a later period Stone Mountain was intruded as shown in plate I by forming up in a great vent from a magma of molten rocks at a great depth, like a volcano mire, to the surface from which the base of the earth at that time. Here in the midst of this great Piedmont geologic phenomenon stood much further east and west than it does now, stood Stone Mountain, perched on a great divide separating into two major drainage districts. As one looks from the top of Stone Mountain, the Piedmont Plateau takes the form of a vast plain, dissected by numberless ravines, with deep red and varicolored soils. As the mist of gray is rising at dawn, one cannot help but feel the impulse of a bygone age, as pictured on the mountain in relief, the rebel hosts are marching from the Appomattox of defeat, facing the rising sun of the east in the glorious light of eternal day.

Stone Mountain had passed through millions of years of its life history before the Island Empire of England was formed; before the Alps, the Rockies, the Pyrenees and the Himalayas were conceived; millions of years before the atmosphere carried enough oxygen for land animals to exist. Stone Mountain has been a witness to the growth and development of every great generation of the animal kingdom; the advent of the vertebrates; the age of the greatest luxuriance of plant growth the world has ever seen, when the land was full of strange creatures, amphibians, great hounds of lizards, crocodiles, dimetrodon, ichthyosaurs and flying saurians. It witnessed the most remarkable change in the world's atmosphere when the vast plant growth absorbed the carbonic acid gas to form coal deposits on the Carboniferous, resulting in an atmosphere enriched by oxygen, paving the way for an atmosphere in which man could live.

Stone Mountain has witnessed the greatest animal migration on the North American Continent. The prolonged cold of the ice age brought about the accumulation of great ice sheets which soon began to flow. Above the ice sheets, stone animals, the horse, the elephant, the mastodon, the sabre-toothed tiger, to meet and mingle with the giant, pike and other wild animals which came up from the tropics.

Who knows but that Stone Mountain was a haven in the night for those shortlives who sought refuge in terror of the coming animal heroes.

We all know of the interesting discoveries in Georgia of the Mound Builders, of flint instruments obviously worked into form by human hands, with conclusive evidence that man is an ancient inhabitant of North America. We have evidence everywhere that our country was peopled by these savages beyond the traditions of the oldest tribes. Perhaps we may find on Stone Mountain traces of the markings of these relics.

Our first impulse, when we stand at the foot of this eighth wonder of the world is to pick up a chip of the rock and wonder of what it is composed. We first notice the brilliancy of the flaky minerals; we find that it has a flat surface as smooth as glass; we can split it off into thin flakes with a knife edge or with the fingers and the thinner the flakes the better we can see through them, so we prove to our entire satisfaction that here is a rock or a mineral through which the sunlight travels, we agree that it looks like the eiseneglass we used to see in old fashioned cars and sure enough that is what it is, mica.

We also see associated with the mica, brome-shaped crystals, sometimes alon. white or gray or pink, with a smooth glassy surface and we find that this mineral is too hard to chip off with the fingersail, we try a knife edge and we can’t even scratch it with steel; we find that it has two nearly perfect crystal faces perpendicular to one another and these characteristics distinguish it as feldspar.

There is another glassy looking mineral...
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YNARD, Ph., D.
Birmingham & Coast Railroad

The Mighty Mountain. How the Marvel Formed Through the Centuries Miles Earth and Today Stands, the ration of Mankind

What the Island Empire of England was formed; before the Alps, the Rockies, the sphere carried enough oxygen for land animals to exist.

every Georgian should know the why and wherefore of the great stone bass

more than allow the light to pass through, they have broken the white light of the sun up into various wave lengths so that these various wave lengths are represented by the colors we behold. We see that this Stone Mountain granite is wholly crystalline; it is of igneous or molten origin with granitic structure; it is massive and acide, namely, the granite was formed from a magma rich in silice, alumna, potash and soda, but poor in lime, iron and magnesia. The crystals are of medium size, the quartz and feldspar are intimately interlocked and associated with numerous black mica. The quartz is characterized by wax extinction with many lines of fracture displaying evidence of pressure. The feldspar are of irregular size and consist of Orthoclase, Plagioclase and Microline. The accessory minerals are biotite, opaque, Ziron, hornblend with secondary muscovite and chlorite. The sulphides and oxides of iron are characterized by their almost complete absence.

We microscopically examined the granite to see without question that Stone Mountain is an igneous rock of molten origin and that more quills written in the rocks and into the crater of an old volcano, maybe it is different from the rocks which surround it, certainly it must be, otherwise, it would not be standing up here alone and we ask ourselves how can we tell where this mountain came from? How old is it? Is it growing larger or smaller? How much does it weigh? What is its chemical composition?

The life history of Stone Mountain is as plainly written in the rocks as is the history of the peoples who have inhabited the earth, and as just as we turn over the pages and read and visualize the history of the race, just as we can read and interpret every page in the life history of Stone Mountain. We study in detail the rocks in an area of nearly four hundred square miles surrounding Stone Mountain; we differentiate and classify these rocks with relation to their physical, chemical and mineral character and relative age; we consider every subdivision of the science of geology for a better understanding of its life history; we must look into every phase which relates to the constituent parts of the earth and its material; the structural arrangement of the deposits, the surface changes and the origin of topographic forms, the succession of events in geologic time, the materials from which rocks are derived, and study the crystal composition of the rocks under the microscope which reveals their nature and growth.

We find by comparing the rocks around Stone Mountain with rocks of known geologic age in other portions of the world that the rocks which surround Stone Mountain can be correlated with the oldest rocks which form the crust of the earth. We traverse the stream bottoms for exposures of these rocks, we visit the quarries and railway cuts where great beds of rock are to be seen and everywhere we find these rocks bent and folded, with a laminated arrangement of crystals, with various types of rock of vein origin cutting through the great rock complex, all of which clearly indicates that the area has been subjected to many movements of the earth. These intrusive veins, we find, filled various size cracks and veins which resulted from the cooling, crystallization, consolidation and shrinkage of the rocks of the great complex. We recall that the study of the earth's history has revealed that the earth in some portions and less density of the earth in other areas, resulting somewhere in depression, somewhere in lateral pressure, forced upward great portions of the earth's crust, just as these same forces are working today in certain sections of the earth accompanied by earthquakes and volcanic phenomena. The mountains and continents rise, the more massive rocks and particularly the crystaline rocks resist bending and folding and crack, so that wide vents may extend to great depths of the earth's crust.

The volcanic phenomena which usually accompanies these movements of the earth, while they are assenive and intrusive are not necessarily extrusive. Here in the midlands of this great rock complex we find evidence of a huge crack which extended downward until it reached a point, where although the bowels of the earth were as rigid as steel, yet they were made viscous by the release of pressure as a result of the Stone Mountain vent and molten rock forced its way upward to occupy this huge void in the Archan Complex, just as water in an artist's well, or all in a newly discovered pool is forced upward through any artificial opening which brings about that relief of pressure.

The molten rock magma which came from unknown depths and penetrated the Archan Complex was destined to be the greatest memorial to the Confederacy. As the Stone Mountain Magma was forced up and came in contact with this rock complex, portions of the rock complex were melted, so is evident from points of contact between the granite and the complex, so that the channel occupied by the molten rock was round out and the form which it took, represented largely by the present contour, resulting from pressure from below meeting pressure from above, the magma spreading and encasing the Archan Complex along in cleavage planes, the lines of least resistance.

In our travels around the world we have seen the fresh lava flow in the Hawaiian Islands and in Japan, we have studied the old extinct volcanoes in our own Rocky Mountains and we conclude that there are no physical similarities between Stone Mountain granite and these new or old extinct volcanoes. The old volcanic rocks are of fine grain, they have a dead like appearance, they often have a glass-like fracture; we know these volcanic rocks have cooled rapidly, they are often very porous, leaving air spaces as the result of the blowing out of steam. We find by chemical analysis, that this Stone Mountain granite is the same composition as some of these lava flows and we find that if we take this same volcanic rock and in the laboratory place it under great heat and great pressure allowing it to cool gradually, this volcanic rock will be transformed into similar crystals to those which form Stone Mountain. We therefore come to the conclusion that Stone Mountain did not reach the surface of the
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