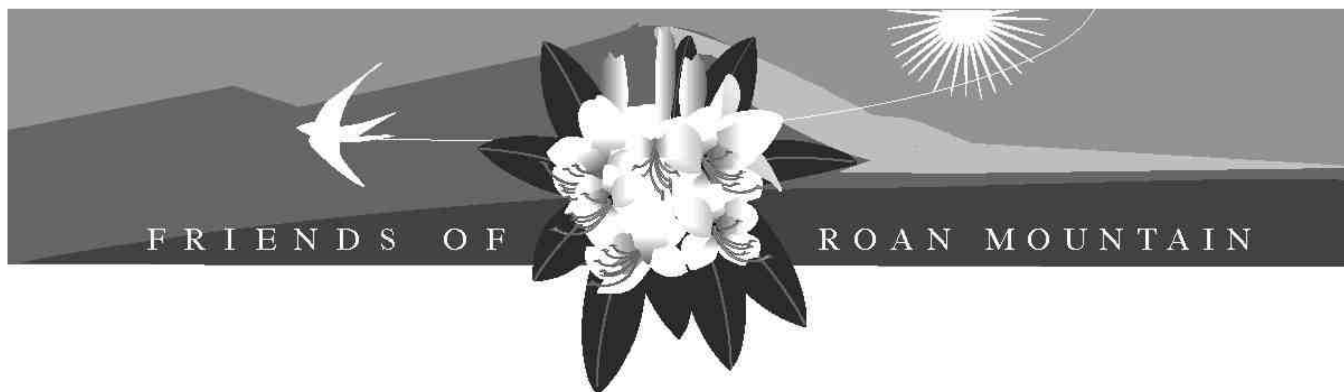



**Volume 11, No. 1** **Spring 2007**

# Rummaging in the Basement of the Appalachian Mountains: Appraising the Rocks for Rare Clues About the Geologic History of the Roan Mountain Area

**— Pete Lemiszki**

I wonder if the Kings Mountain Men paid any attention to the bedrock that formed the shelter of their encampment now located along Route 143 just north of Roan Mountain State Park. Probably not; just as time marches on, so did they. We know about the Kings Mountain Men because their adventures were chronicled as part of the historical record. In a more subtle way the bedrock chronicles the geologic history of the region, we just need to know how to read the language to arrange the chapters of the book in the correct order. The book is a long one with many pages either missing or faded to the point where geologists have developed special techniques to read them.

When outdoor adventurers think of the mountains in and around Roan Mountain State Park they may envision climbing to the top of one of the many summits. But geologically they are climbing into the basement of the Appalachian Mountains. "Basement" is a general term for bedrock that exists below a sequence of sedimentary cover rocks. The term also refers to bedrock that is native to the continent where it occurs, first deformed during an older mountain building event (orogeny), then beveled down by erosion, and later remobilized during a more recent orogeny.

Using the concept known as relative-age-dating, the bedrock exposed at the Kings Mountain Men encampment records at least three chapters of the geological history of the basement. Chapter one involves the formation of a rock type of which we know very little about. Chapter two records the fact that this early formed rock developed a metamorphic texture, which is the result of mineralogical changes induced by deep burial. Chapter three records the subsequent folding and faulting of the metamorphic texture in the rocks. A simple sequence of events, but the devil is in the details. At what point in the Earth's geologic history was each chapter written? At what depth did the rocks form their metamorphic texture? What mechanism provided the energy to uplift the deeply buried bedrock towards the surface?

One thing is for certain, our present understanding of the geologic history in and around Roan Mountain State Park is not the result of studying only the rocks in this region. In order to grasp the events that affected the rocks exposed at the surface today, we need to incorporate observations made throughout the entire Appalachian mountain range, as well as, information from both modern and ancient mountain belts all over the world. What I plan to present at the Spring Naturalist Rally is how geologists read the local rock record to properly arrange the sequence of events and evaluate their significance with regard to the geologic history of the Appalachian Mountains.

**Pete Lemiszki, Chief Geologist, Knoxville Office, for the State of Tennessee will present the Friday evening program at the Spring Naturalists' Rally, May 4th at 7:30 p.m.**

# *Cave Archaeology in Southern Appalachia*

Jay Franklin, *PhD*
Archaeologist, East Tennessee State University

I have been conducting archaeological survey and investigations in caves in East and Middle Tennessee for eleven years now. Many people view caves as mysterious and dangerous locations on the landscape, and certainly this can be true. I will admit that part of my initial attraction to cave archaeology stems from these ideas. However, in the years since I began, I have discovered that most of the time cave archaeology is neither mysterious nor particularly dangerous. In fact, in most respects, it is no different that doing archaeology in any setting. Archaeologists everywhere are concerned with answering the same basic questions: when were prehistoric peoples here and what were they doing.

Archaeology has tended to focus on broad, lowland areas around major river floodplains. This is particularly true in the Southeast where many large-scale archaeological projects were undertaken during the Depression of the 1930s under the aegis of New Deal programs such as the Civilian Conservation Corps (CCC), the Works Progress Administration (WPA), and the Tennessee Valley Authority (TVA). The primary purpose of these massive projects was to put people to work not necessarily to solve prehistoric problems. In fact, projects were often simply undertaken in Southern counties where unemployment rates were the highest. Depression era archaeology taught us much about the prehistory of the Southeast. However, it also led to an understandable research bias that in many ways still characterizes Southeastern archaeology today: a focus on lowland regions.

The State of Tennessee boasts more recorded caves than any other state in the union, some 9000+. Most of these occur in the highland regions of East and Middle Tennessee, e. g., the Cumberland Plateau and the Ridge and Valley physiographic regions. In short, caves are part and parcel geologic features in the uplands of Southern Appalachia. Native Americans who lived in these regions for more than 12,000 years were keenly aware of this fact to the degree that we can say that caves were not only part of the natural landscape but also part of the *cultural* landscape. Therefore, archaeological studies of these regions that do not include caves are incomplete. So, while I confess to becoming interested in cave archaeology in part because of perceptions of mystery and difficulty, it is the fact that Native Americans in upland regions made use of their entire landscape, including caves, for a variety of purposes that has kept me exploring these dark environments. Caves were used for the extraction of resources, such as flint for stone tools, various minerals, shelter, habitation, and sometimes for the production of art. Evidence for this same range of activities is also found on archaeological sites in the open air outside of caves. The point is, again, that caves in Southern Appalachia were an *integral* part of the natural and cultural landscape.

A (left) human footprint from more than 1km deep inside a cave - dated to more than 3,000 years ago.

Where caves often differ from the outside world is in preservation. In caves, the archaeological record is often not subject to the destructive forces that characterize many open air sites (e. g., plowing, weathering, erosion). In caves the modern surface is often the ancient surface. In some cases, it is possible to make out human footprints that have remained for thousands of years. Wonderful works of art can often be seen in the dark zones (beyond the reach of ambient light) of caves on the walls and ceiling. It is not that these types of archaeological remains do not exist outside of caves, only that they are more often preserved inside of caves. Therefore, caves present a unique and challenging opportunity for archaeologists in that they have been typically ignored by many archaeologists throughout the years, and the remarkable

(***continued on page 5***)

## *Rally Memories from Alice Torbett*

I attended my first Roan Mountain Naturalists' Rally in the early 1970's with my mother, Kathryn Jones, who for years wrote a weekly birdwatching column in the Johnson City Press. Participants parked and gathered in the grassy meadow, falling in behind walk leaders who held up cardboard signs announcing their trips.

We wanted to walk with Freddie Behrend, the legendary self-taught naturalist transplanted from Germany to Elizabethton, one of the founders of the rally. Freddie was so short, the sign he held aloft barely bobbled over the heads of the crowd. My mother had said, "Freddie may not know anything else that happens in the world, but he can tell you the exact day a certain warbler arrives in Roan Mountain."

Before the walk even started, Freddie identified several birds in the vicinity. I asked him how in the world he could spot so many birds so quickly. He tapped his ear. "Their calls," he said. "My eyes are not good enough to see them anymore." It was an amazing feat to me, a novice.

In 1974, I think, my husband and I took a non-credit course at ETSU in wildflower identification from Dr. Frank Barclay. A chance for redemption! Dr. Barclay, then retired, had been David's botany teacher in his less-than-sterling college career in the 1950's and, years later, they were fellow members of North Johnson City Rotary Club.

That spring changed our lives. Each week, we added new flowers to our lists at new, easily overlooked sites. In addition to learning the treasures that the woodlands and fields of Upper East Tennessee contained, we learned appreciation, respect, patience and proper identification methods.

"Dr. Barclay has never seen a weed," said one of his former students. And picking a flower on a field trip was an act of irreverence. To this day, I mentally ask his permission before doing it.

The highlight of the class was attending the Naturalists' Rally (I believe then they were only held in the spring.) Dr. Barclay was another one of the founders of the event, drawing on his experience as a guide at the early Smoky Mountain Wildflower Pilgrimages.

"You must come to the picnic at Twin Springs! You have to have coffee from Jim and Edna Potter's cast iron coffee pot!" he told everyone. I bet Bill and Marjorie Dyer were at that picnic. They were in from the beginning, I believe.

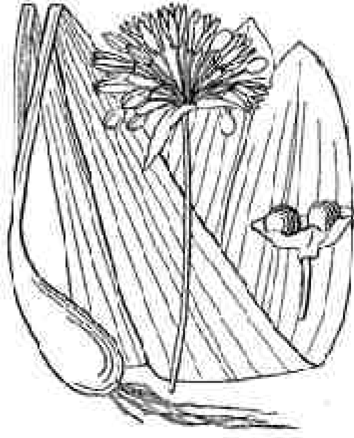
Of course, one of the unique experiences for Roan Mountain rally-ers is being able to view plants of several different climates in one day. In my enthusiastic naivete, I said, "Dr. Barclay, every plant on the continent must have ended up here!"

"No," he said. "Everything started here."

One of the most popular guides at the early rallies was Tom Gray, the Roan Mountain native who knew every inch of the mountain like it was part of him. He knew where to find wild leeks from when he was a boy. He and his buddies would sneak away from school and eat them; then come back with their breath smelling so bad, the teacher would send them home!

Tall, hulking Tom, with his instinctual knowledge, and gnome-like Freddie, with his devoted group of pioneers, established a wonderful tradition!

These are some of my memories from the early Naturalists' Rallies. Even though our attendance at the rallies has been sporadic, we feel very privileged to have been, and to continue to be, associated with the special people who keep the heritage of the Roan Mountain Naturalists' Rallies alive!

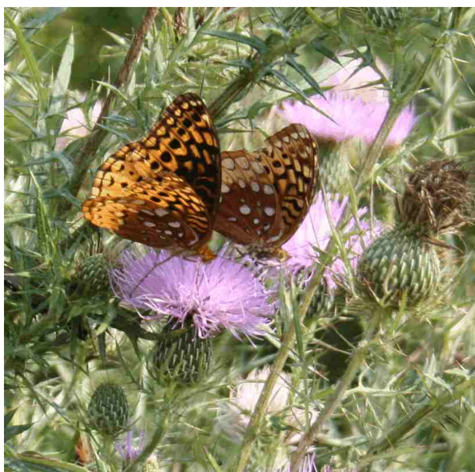


Ramps, (Allium tricoccum or Allium tricoccum var. burdickii, Alliaceae) also known as wild leeks, are native to the Appalachian mountain region in eastern North America.  Ramps can be found growing in patches in rich, moist, deciduous forests as far north as Canada, west to Missouri and Minnesota, and south to North Carolina and Tennessee. As one of the first plants to emerge in the spring, ramps were traditionally consumed as the seasons first “greens.” They were considered a tonic because they provided necessary vitamins and minerals following long winter months without access to fresh fruits and vegetables. Ramps are pleasant to eat and taste like spring onions with a strong garlic-like aroma. They are often prepared by frying in butter or animal fat with sliced potatoes or scrambled eggs. They are also used as an ingredient in other dishes such as soup, pancakes, and hamburgers. They can also be pickled or dried for use later in the year.

(Davis, J.M. and J. Greenfield. 2002. Cultivating ramps: Wild leeks of Appalachia. p. 449. In: J. Janick and A. Whipkey (eds.), Trends in new crops and new uses. ASHS Press, Alexandria, VA.)

# Images From 2006 Fall Naturalists' Rally

Courtesy of Suzie Thomasson

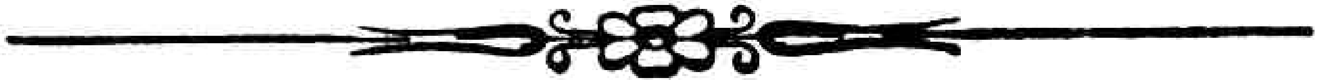


(*Cave Archeology, continued from page 2*)

preservation in cave environments sometimes permits us a view into prehistory that no longer remains in the outside world.

In an important article in the journal, *Southeastern Archaeology*, noted cave archaeologist, Patty Jo Watson, remarked in 1990, "If we want to gain adequate understanding of culture history in the extensive karstic regions of the Southeast, then we must follow the prehistoric cavers into those regions of eternal darkness." It is this challenge that keeps me strapping on a helmet and headlamp and venturing into places that most people today will never see but that someone before me may have thousands of years ago.

Dr. Jay Franklin, Assistant Professor of Archaeology in the Department of Sociology & Anthropology at East Tennessee State University, will present our Saturday evening program at the Spring Naturalists' Rally on May 5th at 7:30 p.m.



## Memorial Donation Honors Martina Haggard

Friends of Roan Mountain would like to thank Janet and Ed Smith for their generous donation in memory of Martina Haggard. In their words, "(Martina's) vision for the Roan and her dedication to it is an inspiration that has a life of it's own." Janet and Ed, who reside in Asheville, NC, attended last fall's rally as guests of Bill Haggard. In addition, we also welcome Janet and Ed as member of the Friends of Roan Mountain.

Anne Whittemore related this small story that emphasizes the graciousness and concern for others by which Martina lived her life.

> *I had brought single prints to the Rally several years ago to be used in the nightly raffle. The originals had been published in a book on wildflowers by the Carnegie Institute. Martina had the lucky ticket which earned her three of these prints. She planned to have them framed and exhibited in their living room. On receiving the prognosis that her time was short, she brought the prints back to her final Rally giving them again for the raffle so that someone else might enjoy the beauty. Truly, those who had the great opportunity to know Martina had a rare treasure in their lives.*

## More Thanks

Artist Andrea Wilson from Cliffside Gallery in Gatlinburg, TN has contributed another of her marvelous nature paintings to our spring raffle. This time it is a symmetrical group of butterflies. There will also be additional prints of Andrea's donated to the raffle by a kind collector. You can find out more about Andrea and view her work at http://www.andreawilsonartist.com/ .

Last fall, Friends member, John DeLoach, donated packets of Blue Lizard Australian sun cream for sensitive skin to be passed out to hikers. Unfortunately, none of the staff working the ball field area had time to pass the wonderful treats out. We would really appreciate the help of one or two kind members at the ball field entrance desk to help with this endeavor. And again, the Board would like to thank John for this gracious and timely donation.

## Jennifer Bauer's Article in the Tennessee Conservationist

Jennifer's article, Naturalists Come From Three States to Roan Mountain Each Spring, is the featured article in the March/April 2007 edition of the Tennessee Conservationist. Published six times a year by TDEC, the magazine presents beautiful photography and informative articles about Tennessee's natural and cultural wonders. You can read the article online at http://www.state.tn.us/environment/tn_consv/roanmtn.shtml

We must have your Rally dinner and lunch reservations in time to let our caterer, City Market of Elizabethton, know how much food to prepare. Please send your check, payable to Friends of Roan Mountain, to Anne Whittemore, 208 Mark Drive, Gray, TN 37615. The deadline for reservations is Wednesday, May 2nd. You can find a reservation form online at http://www.etsu.edu/biology/roan-mtn/ .

Those who dwell among the beauties and mysteries of the earth are never alone or weary of life. . . Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts.

– Rachel Carson

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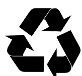

Find us on the web at http://www.etsu.edu/biology/roan-mtn/