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# FIELD NOTES FROM THE EDITOR



by Mark A. Gonzalez

## Of Ruminants and Ruminations



Two fundamental laws of geologic mapping are never taught in school but discovered only through arduous, personal experience. I call these the First and Second Laws of Field Mapping. The First Law states that the most confusing or most interesting geology occurs where the corners of

four maps meet. This requires that one must carry at least three extra maps and study the adjacent corners to decipher the geology in any particular corner of a map. The Second Law is like the first. It states that the most difficult geology to decipher coincides with those isolated points that are farthest removed from all roads. The geology along roads, trails, and cutbanks has already been explored and duly noted, but the most distant points are the ones of unresolved mystery. Resolution requires exploration, a journey into the seldom-seen places of the world.

Such journeys into the untrammelled regions coincide with some of my more memorable discoveries. It was in a canyon where no road ventures, where I found my first falcon nest. A pair of prairie falcons had found an alcove in a sandstone ledge with a large overhang protecting it from the elements and any predation from above, and a precipitous cliff preventing predation from below. Once I found it, I passed that nest almost daily for an entire summer and watched the parents raise their four youngsters. From courtship to nest building and the young's first meal to first flight, I had a marvelous experience watching this family of falcons in the privacy of that remote canyon.

On another geologic foray, I found a massive six-point elk shed. This one was near the famous Ghost Ranch of northern New Mexico. It was here where Georgia O'Keeffe created her most famous and beloved works of art, among them her paintings of flowers and landscapes. Her erogenous paintings of flowers have inspired countless copies, but none finer than hers. She had a tremendous appreciation of and great eye for the New Mexican landscape. Her signature style was to paint from a ground-level perspective, gazing through the sockets of skulls or pelvic bones, or through the tines of antlers in the foreground of her giant canvases. In the background, she captured the magnificent panoramas of northern New Mexico. Like her flowers, O'Keeffe could make any geologic

form alluring, sultry, zaftig. When I discovered this elk shed, I laid on my belly to gain an O'Keeffe-ish, ground-level view of the world. I gazed through the tines at Cerro Pedernal, a lava-capped butte that rises from the flanks of the Jemez Mountains and conspicuously adorns the Rio Chama valley. Although I had seen Cerro Pedernal a thousand times from a thousand vantages, this one through the antler is the one I remember best. It is etched indelibly on my mind. I used to store the antler in the rafters of the garage, surrounded by wings of grouse and partridge, tail feathers of turkey and pheasant, a whale vertebra, skulls of deer, rabbit, beaver, mouse, and other assorted treasures collected in the field. My wife graciously gave me a place indoors where I might spy the antler each day. So it sits in a seldom-dusted nook atop an armoire in the living room. My wife has surrounded the antler with potted plants. She thinks it is just an antler, but it's not. It is a time-travel machine. With a mere glance, it transports me a thousand miles and many years away to my youth and the blue skies and enchanting landscape of the Rio Chama valley.

Elsewhere, in the land of the Chihuahuan Raven, I've tread through relicts of Indian camps and villages. Hearths, potshards, arrowheads, and flakes of flint provided evidence that this place was home to someone long ago. The voices of former villagers have long been silent, but winds from the four corners rekindle their spirits as they race through juniper boughs and sift the silt on the surface. These ruins might be off the beaten trail today, but they were the way, the path, the center of the universe for another generation, a race now vanished.

In the corners of other maps, I have stumbled upon logs of petrified wood, 50 feet long, walked into a hidden maze of towering hoodoos, sat on the edge of a coral reef nearly a half-billion years old, and walked in the footsteps of Cretaceous dinosaurs.

A memorable hike to the infrequently visited parts of a map occurred early one spring in North Dakota when the air temperature had warmed to comfortable jacket weather, but small patches of snow still clung tenaciously to the deeply shaded north-facing hillslopes. It was early in the field season at a time before the Pasque flowers had bloomed. A particularly extensive blotch of white beneath and around a juniper tree attracted my attention. With a superficial glance, I might have dismissed it as another obstinate remnant of winter, an elixir of snow refusing to succumb to the sweet warmth of a newborn spring. But the white was the wrong hue and the patches didn't conform to the shadows of the

juniper as one might expect of long-enduring snows. Perhaps I should have dutifully stayed on track to address my geologic mapping, but the approach of lunch time provided reason to stop for a closer inspection.

As I approached, I realized this was no snow patch, that this white patch would not melt in the hottest days of summer. I had stumbled upon the remains of a bison. Judging by the cleanliness of the bones, or lack of it, and by the degree of articulation of the skeleton, this bison had died during the long nights of the past winter. Clumps of hair were strewn by wind and by crows, magpies, coyotes, and other opportunists. A skull lay nearby—certainly this wouldn't last long before a souvenir hunter would separate head from body.

I hiked to the top of the draw where the sunlight was stronger, the ground drier, the view grander. A sandstone block offered a heat sink to keep me warm during my lunch break. I sat and rested my back against the warm sandstone. A quarter turn to the right allowed me to look at the bison's final resting spot. A quarter turn to the left allowed me to gaze across a labyrinth of clinker-capped knobs, hills, and ridges surrounded by deeply cut draws. Sentinel Butte and Bullion Butte graced the distant horizon. This was a lot of scenery for one person to be in charge of, but I did my best to watch it all closely.

I ruminated my sandwich while ruminating about the life and death of this ruminant. When the sun last set on your life, what final thoughts did you have? Do the fences of Theodore Roosevelt National Park offer a secure retirement home, or an involuntary incarceration? What is it like to be the Park's pampered guest of honor, admired by the occupants in a continuous parade of SUVs, minivans, and RVs? Would death have been nobler at the hands of a hungry Lakota hunter in bygone days of free range and buffalo jumps? What brought

you to this isolated ravine to take your last steps, to breathe your last breath? Did you suffer in a snowstorm? Were you tormented by coyotes? Were you alone or guarded by a close friend or relative? Did you know the end had come? Did you look back at a lifetime spent well? Were you happy? (And what makes a bison happy? A fenceless expanse of knee-high blue grama grass, I reckon.) Is happiness a good measure of a good life? Can your last remains convey a lasting lesson to me, an itinerant geologist?

These were not the questions I had set out to answer when I began my day's trek. But such is the typical outcome of field mapping. Unpredicted outcomes could very well serve as the Third Law or First Corollary of Field Mapping—the original intent of any field day is seldom the final outcome. The day's detour in thought was like many detours in life. We think we know the course, only to find impediments and opportunities that require changes in our itinerary. Some impediments are challenges to overcome, some opportunities are life-changing events that mark new and unimagined paths in our life journey.

How might my end come? Will a soft matt of juniper duff make for a deathbed? Will my decay fertilize next year's Pasque flowers and bunch grasses? Will my boots be laced to my feet? Far worse if they were not. Far better to have yuccas poking my flesh than catheters poking every orifice. Far better to have a rucksack strapped to my back than monitors strapped to every organ. Might I be as fortunate as Sigurd Olson to take one last hike with a eulogy neatly finished in the typewriter? Like Olson, might I pass through my favorite haunts to wrestle with one final mystery of life in an isolated recess of a map? The lure of untrammelled parts is powerful, their secret treasures are fascinating to behold, their stories are mesmerizing.

This ruminant has caused rumination enough.