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A bridge over muddy water

By Curtis Seltzer

BLUE GRASS, Va.—Rolling rocks are on this week's agenda.

Farms on ancient mountain land like ours are well-supplied with this material. I am rich in sedimentary limestone, and not poor in igneous. I occasionally find a quartz crystal next to a cow pie.

Each year's freeze-thaw cycle pulls fresh soldiers out of the ground to join their side of the battle. They occupy territory; I retake it; they retake what's been retaken; and so on. It's like Iraq. Neither side ever wins.

The Allegheny Mountains of the Appalachian chain were once the bottom of a salt-water sea. Then, after what is now Africa crashed into what is now our East Coast, the land was pushed up to more than 20,000 feet. Volcanos added to the orogeny.

Erosion over hundreds of millions of years, wore down what had been scrunched up, leaving the 3,000- and 4,000-foot-high mountains I see today.

Most of the Alps-like mountains that were once here rolled down our hillsides and through our valleys in bits and pieces.

The process left calling cards for Michael Arbogast, who pioneered our farm out of a forested wilderness in the late 1760s, and all who trudged muddy miles in his footsteps.

He and his children cut the huge chestnuts, red oaks and sugar maples on the hills surrounding his log cabin. They needed cleared land to survive. They worked the chestnut into fence rails and lumber, then burned most of the rest.

They picked rocks out of the small, level creek bottom for corn and wheat. Rolling land went for hayfields, and steep slopes were left for livestock pasture.

Behind our farmhouse in Key Run -- a rockbound and usually waterless creek that the U.S. EPA insists is “navigable” because it connects with the South Branch of the Potomac River -- upstream rocks have washed down and now loiter at the ford behind our barns.

These squatters hang out until the mood strikes them to mosey down to the next landowner who doesn't want them. My borders are porous and undefended. I'm hoping these trespassers will “self-deport,” as Mitt Romney put it, and roll back to the top of Snowy Mountain where they came from.

Some years ago, we had a series of floods that, among other things, gouged a swale in a back field which drained into a cattle pond. The flood ripped through the pond's banks, leaving a big mud hole. Later, a wet-weather spring popped up at the head of the swale.

Over the years, water widened and deepened the swale. I can no longer get my tractor up and down its steep sides. Where I need to cross, I am boxed in by a fence line on one side, which I refer to as “the Great Wall of Blue Grass” and the mud wallow with its croaking frogs on the other, which I refer to as “Congress in session.”

I've had enough. It's time to do something.

That's where the rogue detritus from upstream comes in. I have honest work for these Bandidos who boast that they are the rocks the Arbogasts warned me about.

Here and there around here, I can still find a rock-bridge drain. In its simplest form, it's a bridge made of cobble that allows water to run through as well as allowing people, animals and machines to pass over. The cobble slows rushing water and dissipates its force.

A rock bridge cost early settlers nothing but labor, which was provided by their children, of whom many were created and kept around for such purposes.

The bridge builders picked big rocks out of the fields and set them in the gully as the bottom layer. At the upper end of the drain, they flared the stones into a Y to direct the water through the bridge cobble.

The rocks were not fitted together tightly. Water was supposed to run through the spaces between them. Smaller and smaller stones were used as the rising layers approached the desired height.

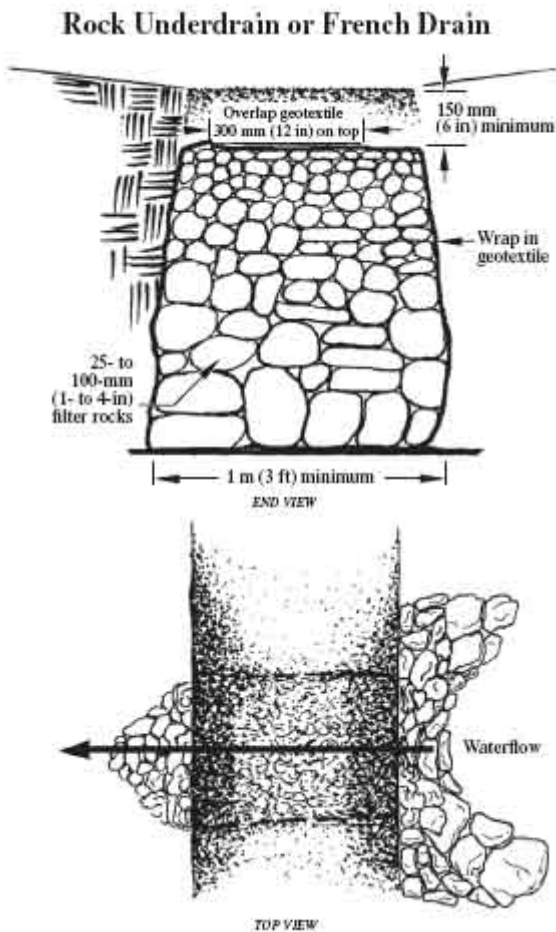
Built correctly, a rock-bridge drain will not wash out even in a flood.

I once owned such a work of art that was probably 150 years old. It worked perfectly. I loved it.

So the next project is to build a rock-bridge drain in the swale's gully.

I plan to lay an old, 10-foot-long, 12"-diameter culvert in the drain's bottom, because I have one on hand, and I'm tired of looking at it. I keep retired culverts on the payroll so I can put them out to pasture, eventually.

The drawings below provide a general idea of a rock-bridge drain without a culvert. Wrapping the rocks completely in geotextile fabric makes the entire structure function as a pipe.



Rock drains are often called French drains.

The French drain did not originate in France as I had hoped.

It was named for its inventor, Henry Flagg French, a New Hampshire native who wrote Farm Drainage: The Principles, Processes and Effects of Draining Land with Stones, Wood, Plows and Open Ditches, Especially with Tiles in 1859. Henry was a lawyer, farmer and U.S. Grant-appointed Assistant Secretary of the Treasury. In his later years, he lived in Concord, Ma.

His young son, Daniel Chester French, sculpted “The Minute Man” from captured Confederate canons in the mid-1870s. The statue stands on the west bank of the Concord River next to the Old North Bridge where on April 19, 1775 embattled farmers fired many shots heard around the world. Daniel went on to sculpt Lincoln at his

eponymous Memorial and the three-naked-figures fountain at Dupont Circle in Washington, D.C.

The origin of the French drain is a huge disappointment to me.

I've had to cancel a six-month-long, tax-deductible business trip to Paris that would have allowed me to observe French drains in their native habitats from the Royal Suite at the Hôtel Plaza Athénée using a pair of Dollar General binoculars.

The Royal Suite (4,800 square feet for \$40,000 a night) does have a kitchen if you want to fix yourself a grilled cheese to save on food. It also has four bathrooms for the truly needy.

The IRS, in addition, wrote to inform me that I cannot deduct "expenses incurred in the silent presence of old paintings hanging in the Musée du Louvre" unless I confine my oohs and aahs "to agricultural landscapes of the French countryside that include at least one rock structure used to enhance the ability of the farm depicted to make a profit three years out of five for the resident peasant, and two cows, preferably of American origin such as Herefords or Charolais."

My plan is to line the ground in the crossing with an old tarp, lay in the culvert and install rock cobble on either side. I'll shuttle the Bandidos from the ford in Key Run to the rock-bridge drain in the bucket of the tractor.

It's not a big, bad Harley, I admit, but the tractor is just as noisy and has double the number of wheels. If a Bandido complains about commuting to work on a vehicle as uncool as mine, I'll leave him in the creek and tell the Cossacks where to find him.

I'll have to emplace the first layer of big stuff by hand, which I'm not looking forward to.

In the far and highest corners of our farm are two, large-and-nondescript rock piles. My guess is that they were started more than 225 years ago. Each stone was picked off the ground or dug out of the earth.

Left in corn fields or hay meadows, they would have broken hand tools, like scythes, and machinery, like mowers and balers.

Since Arbogasts lived here until 1960, it's their time and labor that's invested in these secular shrines from which I benefit.

I could rob these stockpiles to use in my rock-bridge drain. But I decided that this convenient option, while not exactly sacrilegious, was disrespectful. It would have felt like cheating.

The two rock piles are humble monuments of the unwanted.

They're not grand sculptures of American heroes. But they do represent how this part of the country was built, in the fields, subtracting one rock at a time, by ordinary people.

Those anonymous pickers and pilers of rocks made a difference, for themselves and for those who came after.

What's impressive is that the Arbogasts cleaned rocks out of their hillside pastures to make it easier on their cattle and sheep. It would have been tempting to stop after clearing the bottom land for corn and the meadows for hay.

I like the idea of contributing my own little rocky memento to this farm.

Corky was here.

I'm not making much of a difference, I admit, but a rock-bridge drain will make crossing easier for both me and those who come next.