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## THE EARLY HISTORY OF PENDLETON COUNTY CAVES 1760 to 1860

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### THE NITER CAVES:

The saltpeter industry in Pendleton operated at varying levels of intensity for about a century, from *circa* 1760 to the close of the Civil War, and possibly even beyond in a few isolated instances. It supplied potassium nitrate, the essential and major ingredient for the manufacture of gunpowder. This was probably the only mineral product that was exported beyond the bounds of the county until World War II. At least 14 caves in the county are associated with saltpeter mining.<sup>1</sup>

Pendleton County was located in the zones of concentrated cave niter production during the three wartime periods of peak output: The Revolution, the War of 1812, and the Civil War.<sup>2</sup> The greatest development and highest production levels generally occurred during the Civil War. It seems likely that several Pendleton caves were exploited intermittently from the colonial period through the Civil War, perhaps those at Trout Rock, Cave Mountain, and the Harman Hills.

Within Pendleton County, only the operations of the niter caves at Trout Rock can be documented with specificity from unimpeachable original sources, *i.e.* documentary evidence contemporary with the described conditions or events. At least with regard to sources located thus far, most evidence for the other caves has been derived from local traditions recorded by cavers and local historians, and/or discovery and examination of artifacts and excavations within the caves themselves.

Franklin attorney and local historian H. M. Calhoun (1866-1933), who wrote rather extensively about the county's caves, did interview surviving Civil War veterans, presumably including some saltpeter miners. Although some undoubtedly exist, this writer cannot recall a single published instance of an unquestionably authentic name, initials, or date inscribed on a cave wall by a Pendleton saltpeter miner.

The Trout Rock operation was a large one, but some of the county's caves, typical of perhaps most saltpeter mining throughout the American South, yielded only small amounts of niter. These were efforts by only one or two persons who, using ordinary farm tools and working during winter or inclement weather, produced for personal use or something to barter at the general store. Written records pertaining to these smaller works

are virtually nonexistent. Even when the physical evidence within a particular cave is abundant, it is often difficult to ascertain the time of mining with certitude. Saltpeter caves are usually quite dry and many tools and improvements doubtless remained in place in an excellent state of preservation, to be used again and again. By the time of the Civil War, the now shadowy Pendleton niter industry had over 100 years of experience.

With the important exception of the American interior and frontier, demand for domestic saltpeter subsided with the end of the Revolutionary War. But there apparently was no market collapse anywhere near as drastic as that which occurred after the War of 1812. Between 1783 and 1808 there were no government-imposed barriers to the importation of cheap saltpeter from British India, as the Tariff of 1789 placed saltpeter on the free list.

The high labor and transportation costs of domestic cave saltpeter could not easily compete in coastal areas with cheaper imported saltpeter, so American powder mills used the latter product. In the nation's interior, however, the same high transportation costs tended to preserve the local market for saltpeter furnished from caves. Significant quantities of saltpeter were produced from Virginia, Tennessee, and especially Kentucky caves during the 1790s, and some was marketed on the Atlantic seaboard. Little of a specific nature is known about Pendleton's niter production in the 1790s, but there undoubtedly was some. The first county production figures would not be available until 1810.<sup>3</sup>

The Jefferson and Madison administrations applied the policy of "peaceable coercion" in retaliation against British and French interference with American maritime commerce and British impressment of American seamen, measures both European powers believed expedient during their interminable war (1793-1815). The design of the Embargo Act (December 1807) was to force recognition of American neutral rights, without war, by shutting Britain and France out of the lucrative American market. To aid enforcement, the act forbade all United States trade with Europe. The Nonintercourse Act (1809) was a less drastic application of the same principle. Although imperfectly enforced, these acts greatly reduced trade with Europe, including imports of saltpeter, and spurred American manufactures generally. One result was rising domestic saltpeter prices, because of both reduced supply and

the possibility of war. This was the historical context in 1808 when Alexandria, Virginia saltpeter merchant Anthony C. Cazenova penned a letter to E. I. du Pont of Wilmington, Delaware. This missive contained directions, written by one of Cazenova's saltpeter buyers, for an itinerary along the "Old Virginia Saltpetre Route."

The letter reveals the extent to which Pendleton and contiguous areas were already considered important sources of niter. Presumably du Pont would have been more knowledgeable on this topic if he had been using domestic rather than imported saltpeter in his powder mills.

*"I would recommend to Mr. du Pont to commence his researches for saltpetre at Franklin in Pendleton County, and pursue his route along the foot of the Alleghany Mountain, keeping the mountain on his right; from Franklin to the warm springs in Bath County, from thence to Fincastle in Botetourt County, thence to the Sweet Springs in Monroe County, thence across the Alleghany Mountain to Uniontown, also in Monroe County. My knowledge of the saltpetre country does not extend farther than the above direction, but in this route he can make himself acquainted with the whole saltpetre country."*<sup>4</sup>

The first comprehensive, if not entirely reliable, set of saltpeter and gunpowder production figures appear in the 1810 census of manufactures.<sup>5</sup> That year Virginia saltpeter production of 59,175 pounds was third after Kentucky's 201,425 pounds and Tennessee's 146,828 pounds.<sup>6</sup> Pendleton County was the leading producer in the Old Dominion with 23,000 pounds valued at \$4,600. In second place was Lee County with 13,377 pounds. Six other Virginia counties produced lesser amounts of saltpeter.

Only two Kentucky counties and two Tennessee counties produced more saltpeter than Pendleton in 1810. With respect to the manufacture of gunpowder, Virginia had 53 powder mills that produced 130,059 pounds valued at \$60,767.34. Six of these mills were in Pendleton, the total output of which was 23,750 pounds worth \$6,525. Only Henrico County (Richmond) with 60,000 pounds, valued at \$36,000, produced more powder than Pendleton. Eighteen other Virginia counties manufactured lesser amounts of gunpowder. Only Fayette County (Lexington) in Kentucky produced more than Pendleton, just barely with 24,000 pounds. No Tennessee county produced even half as much powder as did Pendleton.<sup>7</sup>

The failure of the policy of peaceable coercion led to the United States' declaration of war against Britain in June 1812. The British blockade of American seaports

forced total reliance on domestic sources of niter. Saltpeter prices soared during the war years, 1812 to 1814, they were five to six times higher than in 1810. Total production levels for the war are unknown, but they were very large and adequate to the nation's defense needs. Kentucky was apparently the largest producer; an 1828 source asserts that Kentucky turned out 400,000 pounds a year, more than the entire nation in 1810.<sup>8</sup> With respect to Pendleton, Morton states that the caves of Trout Rock, Cave Mountain, and the Harman Hills contributed saltpeter to the war effort.<sup>9</sup> Considering the price of niter, it seems likely that a number of other county caves were worked. And in light of Pendleton's prominent status as a producer in 1810, the county's output must have been a large one.

Saltpeter prices collapsed with the restoration of peace, and the availability of plentiful inexpensive supplies from British India. Moreover, relatively cheap imported English gunpowder of excellent quality became available. Large, efficient powder mills in the Northeast, which used imported saltpeter, came to dominate the domestic market. A transportation revolution between 1815 and 1860 bound the country together with turnpikes, steamboats, canals, and railroads. This growing interdependence undermined local markets once protected by distance and high transportation costs. Some local niter caves and powder mills continued to operate at much reduced, and after 1840, ever decreasing levels.<sup>10</sup>

Following the War of 1812, Morton states, Pendleton's niter "industry continued until after the breaking out of the war of 1861."<sup>11</sup> This is true, but in the manner described above. The printed census of manufactures in 1820, a depression year hard on the heels of the Panic of 1819, describes some powder-making in seven Virginia, six Tennessee, and five Kentucky counties.<sup>12</sup> The only manufacturing activity listed for Pendleton is "Saltpetre." This entry pertains only to the operation at Trout Rock. The "market value of the articles annually manufactured" is listed at \$4000, "the cost of raw materials annually consumed" at \$1500, and the "amount paid annually for wages" as \$800. The works employed eight men and two women. The following statement is appended under "General Observations":

*"There is attached to this establishment a gunpowder mill which manufactures about 4 or 5,000 pounds; but during the late war the amount manufactured was about 24,000 pounds. The works are now scarcely worth attending to."*<sup>13</sup>

The 1840 census records ten powder mills for Virginia, of which four were located in Pendleton County, which included northern Highland prior to that

county's formation in 1847. The latter four were evidently one-man operations, with a capital investment of \$225, produced 1,100 pounds of gunpowder.<sup>14</sup> There may well have been other operations not recorded that began and ceased work in between the years of the decennial census. In 1850 there were no gunpowder mills in Virginia, although Kentucky and Tennessee had one each.<sup>15</sup> The listing of Pendleton manufactures for 1860 makes no reference to saltpeter or gunpowder.<sup>16</sup>

Fragments of evidence relating to Pendleton's antebellum niter industry can be found in the histories of certain individuals. Already noted are Jacob Harper and his sons who made powder in Germany Valley.<sup>17</sup> Powder making is extremely hazardous and occasional disasters make this activity conspicuous. In 1804 Peter Moyers died in a powder explosion.<sup>18</sup> About the same time Jacob Crowshorn (Croushorn?), who lived not far upstream from Trout Rock, also was killed in the explosion of a powder mill.<sup>19</sup> One might speculate that these deaths occurred in the same explosion (which was connected to the Trout Rock niter works), but the details are lost in the mists of time.

Jacob Propst and his son John J. (born 1806) were "noted powder makers" who made "superior quality" powder. In 1910 the remains of one of their mills could still be seen on the farm of Laban H. Propst.<sup>20</sup> At some point in the mid-1800s, Max Harper made powder at a mill on Thorn Creek in the neighborhood of Hoffman School Cave.<sup>21</sup> A second powder mill on Thorn Creek was that of John and Catharine Bowers Amick. About 1835 it was destroyed in an explosion, but the operators escaped injury.<sup>22</sup> In the Smoke Hole, Peter Mozer's "crude" mill blew up, leaving him unharmed except for a missing ear.<sup>23</sup> Yet another powder mill, date and operator unknown, existed on Hively Gap Run "near the late Byron Bodkin residence."<sup>24</sup>

The names of several county streams or other natural features are reminiscent of saltpeter caves and powder mills. The Amick mill was located near the Powder Mill Hole of Thorn Creek.<sup>25</sup> Also on Thorn Creek is Powder Mill Spring.<sup>26</sup> In Powder Mill Hollow, Powder Mill Run flows from the northwest into the South Branch by Trout Rock. These names have partially disappeared from current usage but seem likely to be restored.<sup>27</sup> A second Powdermill Run drains into the North Fork from the east about three miles northeast of Seneca Rocks.<sup>28</sup> The small run flowing from the east into the South Branch just south of Cave (Cove) Knob Cave is known as "Saltpetre Run" on an old deed.<sup>29</sup>

The premier commercial niter-producing site in Pendleton County was Trout Rock, named from the plentiful trout found in the adjacent pool in the South Branch River.<sup>30</sup> Trout Rock's preeminence was based

on the abundant niter deposits in two caves, the proximity to good supplies of water and timber, and most especially, its location on a main thoroughfare which provided superior market access.<sup>31</sup> By 1800 the caves were owned by John Penninger and the saltpeter works were already in operation, superintended by John Mefford.<sup>32</sup> That year Penninger leased a nearby tract of land to Mefford, the lease referring to Mefford's "Saltpetre Camp." Located on a 33-acre parcel were the entrances to the three caves, only two of which, Trout and New Trout, were mined for niter.

In October 1801 Penninger sold a one-half interest in the 33 acres to Henry Jones. The price was 50 pounds "current money of Virginia." The other half interest in the 33 acres was conveyed to James Kee in February 1804. Following the death of Jones, his widow on July 4th, 1804 conveyed for 39 pounds her "right and Title of Dower in to and for the saltpetre Caves and all the lands adjoining or lying on or near to the South branch of Potomack of which the said Henry Jones deceased died possessed." The purchaser was Aaron Kee, brother of James Kee.

An earlier deed—in January 1804—to an adjacent or nearby tract described its location as "opposite the Big Saltpetre Caves." These were the first explicit deed references to the Trout Rock caves. In 1805 Aaron Kee purchased 482 acres, across the South Branch and bounding Kee Draft on the northwest, from William McCoy as agent for the huge landholdings of Joseph and Benjamin Chambers.<sup>33</sup>

The brothers James and Aaron Kee, both Franklin merchants, continued as proprietors and managers of the Trout Rock niter works from 1804 until April 1813, when James sold his one-half interest to Aaron. Aaron was then the exclusive owner during the greater part of the War of 1812-14, almost certainly the period of the property's greatest profitability. Aaron died in 1816, after which the works were leased by his heirs and managed by Jacob Moyers. Saltpeter demand and prices plummeted following the war, but the works were still in operation, though under straitened circumstances, in 1820. For that year's census of manufacturers, Moyers described the concern's financial outlook:

*"There are Generally when the works are properly conducted about 20,000 pounds of Saltpetre Manufactured Annually which with considerable difficulty we have generally sold and bartered at about twenty cents/lb. making the sum of \$4000—*

*"The situation of the works are not so good as it was in the life time of the late Owner Aaron Kee dec.—and there is no demand for Salt petre Except in the Vicinity of the works and further west. There is*

*also a Powder Mill attached to the Establishment at which there is now about four or five thousand pounds of powder Manufactured Annually but when powder was in demand it Manufactured about 24,000 pounds per annum—Upon the whole the works at this time are scarcely worth attending to Owing principally to the extreme low prices of Foreign Saltpetre and powder—*<sup>34</sup>

An 1820 Day-Book of a Franklin merchant, listing each item for sale and its price, includes gunpowder at \$.625 per pound. This product probably came from the Trout Rock works or other local powder mill.<sup>35</sup> When and if Trout Rock continued operations, however intermittently, over the succeeding decades, and whether it was one of four powder mills in Pendleton in 1840, is unknown to this writer. But there was no activity in the mid-1830s.

*“Three miles above Franklin, there is a rich saltpetre cave, from which a vast quantity of nitre has been made, but the works are now idle. The entrance of the cave (New Trout?) is a small aperture near the base of a small mountain, and it extends under ground for some miles.”*<sup>36</sup>

Aaron Kee's widow Catherine died about 1840. Aaron's estate was not finally settled until 1848. His substantial personal estate of almost \$55,000, which does not include his extensive real property holdings, must reflect in part the large profits of the Trout Rock enterprise during the War of 1812. A sale bill in connection with the estate lists 2,100 pounds of saltpeter (\$320.84), 600 pounds of refined saltpeter (\$171.12), and 600 pounds of gunpowder (\$171.12). Aaron Kee was a slaveholder, but it is not known whether any of his slaves ever worked at Trout Rock.<sup>37</sup>

In 1848 William McCoy, nephew of the general and congressman, purchased from the Kee estate 828 acres, which included the three cave entrances, for \$602. McCoy owned the caves until 1867, but through the Civil War years they continued to be known as the Kee Caves. Aaron's son James B. Kee (1803-1878) served as the Pendleton County delegate to the Virginia General Assembly from 1850 to 1860.<sup>38</sup>

The three Trout Rock caves were located in a bluff on the left (north) bank of the South Branch River, 3.5 miles southwest of Franklin. The westernmost entrance, a crawlway, opened into the rectilinear maze of what is now known as Hamilton Cave, the damp passages of which contain no physical evidence of ever having been mined for saltpeter.<sup>39</sup> About 500 feet to the east, 150 feet above the flood plain, lay the mouth of Big (Trout) Cave, with an entrance 20 feet wide and 15 feet high. A 1948 map of the cave shows a main passage

perhaps 1500 feet long with, at many points, a cross-section of 10 to 20 feet. The smaller triangular entrance to Little (New Trout) Cave is 300 feet east of Big Cave and 60 feet above the river bottom. The initial 600 feet of a typical strike passage is remarkably straight with maximum dimensions of 15 feet wide and 20 feet high. Beyond this point, as illustrated on a 1951 map, the passage continues another 1000 feet, along which distance two rooms are developed. Both caves exhibit a more complex passage pattern as the explorer penetrates further into the interior.<sup>40</sup>

Typical of niter caves, Trout and New Trout are quite dry, at places dusty. The earth was excavated from chambers and passageways often far under the mountain. The peter dirt was sometimes scooped from out-of-the-way niches, nooks, and crannies. Rocks were sometimes moved or broken up to get at the niter-bearing earth. Many side channels were mere crawlways through which the “petre monkeys” had to drag the bags of earth, their way lit only by the dim yellow light of flickering, smoking fagot torches. At the higher entrance, and perhaps the lower as well, the contents of the bags were poured into a spout or trough by which they slid down the steep hillside. The peter dirt was then transported by wagon to the leaching vats by the South Branch River.<sup>41</sup>

A simplified description of the process by which the cave earth was converted into saltpeter follows. The cave earth was placed into the vats and water added. After standing for several days it was then drained. To this leach water was added a solution of potash salts, produced by the leaching of wood ashes. A chemical reaction substituted potassium for calcium, precipitating the latter. In this way calcium nitrate (cave or false) saltpeter was converted into potassium nitrate (potash or true) saltpeter. After purification by straining off the calcium, and concentration by protracted boiling and evaporation of the liquid in large iron kettles, the remaining niter crystals cooled and hardened into cakes of potassium nitrate. The Trout Rock niter works included a powder mill; however, if the operation did not have a powder mill, “the crystals were dried, packed in bags, boxes, or kegs, and then shipped to a powder mill.”<sup>42</sup>

At Trout Rock, like nearly all Pendleton saltpeter operations, the cave earth was brought to the surface to be leached near a stream. Where the leaching vats were placed inside the cave and water was piped or carried to the vats, the dry cave environment might protect these relics, if protected from the destruction of vandals, to survive to the present day. This did not happen in Pendleton; all vats were on the surface and subject to weathering. They quickly rotted away, leaving only the casts of the dirt within, if that.<sup>43</sup>

Along the South Branch at Trout Rock there evidently existed a water wheel that pumped water to the leaching vats, or possibly turned the machinery of the powder mill.<sup>44</sup> And the allusion to John Mefford's "Saltpetre Camp" about 1800 suggests that there may have been housing for the niter workers. In 1820 the works employed eight men to make saltpeter and gunpowder and two women to perform such chores as cooking and washing. Equipment included a team and wagon, eight 38-gallon kettles, and the "necessary machinery" for draining the liquor from the saltpeter dirt. The operation consumed 4,000 (7,000?) bushels of saltpeter dirt and 11,500 bushels of ashes each year.<sup>45</sup>

One informant, whose father worked at the niter works during the Civil War, reported that 12 to 20 men worked in "the cave," but Confederate Niter and Mining Bureau payrolls reveal a wartime workforce several times more numerous. At that time the works used four large kettles. The dry dirt under buildings in the neighborhood was also gathered for leaching at Trout Rock. One challenge and bottleneck in niter production was the procurement of a sufficient quantity of potash to treat all the leach water. This required the labor of wood cutters and burners and ash haulers. The source of timber for the Trout Rock works was the higher elevations of Jack Mountain, "the northern end of which is adjacent to the river bend where the leach vats were located." The same men alternately worked in the caves and on Jack Mountain cutting and burning trees.<sup>46</sup> In addition to wood ashes, timber would be required for fuel for the boiling kettles, for construction and fashioning wooden tools, and for charcoal as a minor but essential ingredient in the manufacture of the gunpowder.

As a consequence, a vast expanse of Jack Mountain was denuded of its original forest of oaks, sugar maple, hickory, and walnut.<sup>47</sup> Throughout its long history of intermittent operation, there must have been buildings at the works, such as a structure for the powder mill, and sheds to keep the niter dirt and wood ashes dry, to prevent premature leaching. This is confirmed by a report of a March 1864 Federal cavalry raid, which describes the destruction of buildings and materials worth an estimated "\$8,000 or \$10,000."<sup>48</sup>

One tradition places the location of the Trout Rock powder mill at the mouth of Powder Mill Run. Powder mills were driven either by animal or water power. The latter seems more likely considering the vigorous gradient of Pendleton streams, and there was at least one waterwheel at Trout Rock. The grinding and blending machinery of powder mills was invariably constructed of wood, since moving parts of stone or metal would produce dreaded sparks—and explosions.

The charcoal could be obtained locally, but the source of sulphur for Pendleton powder mills is unknown. Antebellum powder makers in the Kentucky Bluegrass imported cheap sulphur from Sicily, which was refined in France. Even during the Napoleonic Wars, when the British blockade reduced the availability of the refined product from France, crude Sicilian sulphur could still be imported. Powder makers refined their own sulphur. This was a possible source of sulphur for Pendleton powder makers.<sup>49</sup>

Very large caves with sufficiently smooth floors and gentle grades encouraged the use of mules, oxen, or donkeys to pull the carts of niter-bearing earth to the leaching vats—or bags of dirt were hauled on the backs of pack animals. A few examples are illustrative. Mammoth and Great Saltpeter caves in Kentucky used ox-carts. Alabama's Sauta Cave had a tramway—cars with flanged wheels were pulled over wooden tracks by mules. Burros pulled carts in Greenville Saltpeter Cave, Monroe County, West Virginia.

In contrast, although the main passages of the Trout Rock caves were rather spacious, they generally did not lend themselves to the use of wheeled vehicles or pack animals to transport niter dirt. In fact, with a single exception, no Pendleton saltpeter cave is known to have employed animal-powered wheeled transport underground, although there may have been a few wheelbarrows. The exception involves Germany Valley's Schoolhouse Cave, where a track and cart system was constructed.

The floors under Trout Rock Mountain often consisted of fallen rock, if not huge blocks of breakdown, which offered either precarious footing or obstructions. Large passage alternated with constrictions. Some passages were just too steep, low, narrow, or tortuous. But paths were cleared, plank bridges spanned chasms, stone steps and various types of ladders eased the negotiation of ascents and descents. Faust states that the miners usually carried the cave earth in burlap bags dragged through crawlways or slung over a shoulder if the passage permitted walking. Calhoun asserts that the "petre monkeys" at Trout Rock carried haversacks or small canvas bags.<sup>50</sup>

The source of light used most often in saltpeter caves—including those at Trout Rock and in Pendleton generally—was the fat-pine fagot, or bundle of flammable sticks. But alternatives did exist. In Mammoth Cave candles sometimes provided illumination in the vicinity of the leaching vats while the miners carried lard-oil lamps. From Clark's Cave in Bath County, Faust reported the discovery of "lengths of elder wood from which the pith had been removed and the hollow tube thus obtained filled with animal fat or grease, which

when lighted, burned like candles.” Still other examples might be cited.

However, only one exception to the use of fagots in Pendleton caves is known to this writer. This is a single candle, believed to be of mid-nineteenth century vintage, found in New Trout. More typical are the “bushels” of charred fagots “scattered throughout” Trout and New Trout caves. Black soot from these smoking torches stained cave ceilings and walls. New Trout is especially infamous for the layer of black dust which covers many surfaces, in some places attaining a thickness of one inch and choking explorers who stir up clouds of the stuff.<sup>51</sup>

The excavation of peter dirt significantly increased the physical volume of the more heavily mined caves. Leached earth, if left in the cave for several years, could be recharged with nitrates.<sup>52</sup> But this generally did not happen in Pendleton, since the peter dirt was taken out of the cave to the leaching vats, usually located along a surface stream. Consequently, over a sufficiently lengthy interval, niter deposits would inevitably suffer depletion.

It was not unusual for the miners to remove fills which had largely or completely choked particular passages. Of course rocks broken up or moved to get at the niter-bearing earth were of no value and not carried from the cave; even very small stones might be separated from the valuable peter dirt by the use of sieves or screens to reduce the weight of unproductive material carried by the miners.<sup>53</sup> In both Trout and New Trout, areas of extensive mining occurred about one thousand feet from their entrances.<sup>54</sup> New Trout was “very thoroughly cleaned” of cave fills. Along the South Branch, near the former location of the vats, large mounds of leached cave earth would remain in evidence for well over a century after the Civil War.<sup>55</sup>

Although structures on the surface succumbed to weathering, underground the relics of saltpeter operations were preserved in the dry environment typical of niter caves. These survived more or less intact into the early 1940s, when they were discovered by the first generation of NSS cavers. Over subsequent decades, vandals stole or destroyed the more conspicuous items and those not removed for safekeeping. Still, more subtle evidence of mining and smaller artifacts would continue to be discovered into the 1990s, especially at Trout Rock.

Abundant evidence of the niter operation remained in Trout Cave. Although most tools were constructed of wood, there were distinct metal pick imprints in banks of peter dirt that were worked far from the entrance. Stone steps, plank footbridges, and several wooden

demountable ladders helped the miners negotiate pits, canyons, and passageways on different levels. A “small hand-hewn, rectangular-shaped water trough,...located 150 feet inside the entrance, under the only water drip in the cave” gathered drinking water, and over time had accumulated a veneer of calcite.

There were also a number of “paddle-like wooden scrapers” and an assortment of unburned and partially consumed fagots.<sup>56</sup> Still additional articles included “several more keg hoops and staves, ....one or two wooden paddles,” two metal hoes, only one of which had an intact handle, and “crudely woven cloth—possibly part of a bag used to carry out the petre dirt.”<sup>57</sup> A metal hammer, home-made from a file and lost near Trout Cave, may have belonged to an employee who was involved in the construction of the wooden structures at the works.<sup>58</sup>

New Trout has disclosed perhaps an even greater treasure of artifacts. Until late 1951, this cave was unknown to NSS cavers. On its rediscovery, saltpeter historian Burton Faust remarked that “...saltpeter mining activities were apparently much greater in this cave than in Trout's.”<sup>59</sup> The catalog of New Trout relics includes “a demountable ladder about 6 feet long...; two metal-bladed hoe-like scrapers, each of which is fitted with a 24-inch hickory wood handle; a forked wish-bone shaped grapple made from a tree branch, which has one leg much longer than the other, and apparently was used to pull bags of earth from one level to another; a bag mouth spreader similar to those used by millers; and several bridges which were constructed of hand-sawn planks and poles.”<sup>60</sup>

In 1951 Faust discovered several devices previously unknown to him. In addition to the metal hoe-like scrapers noted above, and “several types of bag-holders,” there was a rare wooden “push-pull box” with dimensions of 14, 12, and five inches, to one end of which was attached a cord. The box was evidently

*“used to pull loads of peter dirt out of holes too small to permit a man to crawl through dragging a bag. One man must have worked back in a small crawlway, filling the box, while a second man pulled the box out, emptied it and pushed the box back in again with a stick.”*<sup>61</sup>

Other finds were “a paddle with two sets of initials carved on the blade,...evidence...of the use of rock drills..., and direction arrows chiseled in the rock.”<sup>62</sup> Two years later another party found a well-preserved metal pick with wooden handle, an old ladder, two wooden paddles, a remnant of “rough, homespun cloth,” and bundles of fagots, the individual sticks being about one foot long and one inch thick.<sup>63</sup>

At one point in New Trout a rock projection was blasted away to ease passage of the miners. Two drilled holes remain at a point "deep in the cave....in the maze of crawls which was dug out by miners and now underlies the passage."<sup>64</sup> Other artifacts include staves and hoops from small kegs, "possibly containers for blasting powder," wooden trowels and paddles, and a log ladder with notched steps.<sup>65</sup> Doubtless there have been many other items recovered over the years.

Sinnett Cave illustrates the lengths to which miners were prepared to go to find and transport productive saltpeter dirt. Its history also suggests the extent to which the niter industry has been hidden and forgotten. Although Burton Faust described Sinnett as "a very important production center" and "one of the most spectacular" operations in his experience, to this writer's knowledge there is no documentary record and until quite recently no local historian ever mentioned it, even when writing specifically about Pendleton saltpeter caves.<sup>66</sup>

The entrance to Sinnett is located in a picturesque setting at the north end of Thorn Mountain on the south bank of Whitethorn Creek. The cave mouth, 60 feet above the creek, opens at the top of a moss- and fern-carpeted talus slope shaded by large hemlocks. The entrance, "about four feet high and eight to ten feet wide," leads to 20 feet of crawlway followed by 400 feet of walking passage. At this point the passage assumes a keyhole cross-section, "a crawlway 450 feet long, having a fissure one to two feet wide, ten to 15 feet deep, in the floor." Traversing this section requires much "crawling, climbing, and canyon-straddling."

Then the explorer ascends "three sets of shelves, ten feet apart" that open at the bottom of the "silo," a smooth-walled tube about six feet in diameter that slopes upward at a 40° angle. A crawlway connects the top of the silo with the Long Room, which lies along a northeast-southwest axis and "is 90 feet above and parallel to the lower entrance passage. This room is 800 feet long, averaging 70 to 80 feet wide, and is triangular in cross-section with a ceiling height of 40 feet at the apex." At intervals its floor is littered with huge limestone breakdown blocks. Emerging for the first time from the cramped crawlway passage into this enormous chamber is an awe-inspiring experience.<sup>67</sup>

At the south end of the Long Room, according to Faust, was "a great bank of cave-earth....about 40 feet wide, over 100 feet long and of undetermined depth," from which "hundreds of cubic feet" had been excavated. Three pits open against the room's east wall. Evidently the miners shoveled the peter dirt into bags that were then carried about 400 feet over well-worn paths and "several series of stone steps" to the

northernmost pit, which served as a chute or funnel to the lower level 90 feet down. The sacks of dirt were emptied into the pit, and their contents "tumbled and slid, amid billowing clouds of yellowish dust" to a large, flat rock called the "Rail Rock." This route enabled the "petre monkeys" to avoid the strenuous traverse of the fissure passage. At the Rail Rock the miners rebagged the peter dirt and, burdened with their heavy loads, trudged 400 feet to the cave entrance, descended the talus slope, and crossed the creek to the leaching vats on the other side.<sup>68</sup>

Faust states that the distance between the entrance and the "tremendous deposits" of saltpeter earth in the Long Room exceeded 1200 feet. Also, in light of peter dirt adhering to walls and ceiling, he believed that "almost the entire intermediate level of passages below The Hall of the Mountain King" (or Long Room) had once been completely plugged with fill which was subsequently excavated.<sup>69</sup>

Sinnett has yielded somewhat fewer artifacts than the Trout Rock caves, but more than any other niter caves in Pendleton. One item was a single-pole ladder, "made by augering holes through a log along a longitudinal line and driving pegs into the holes so they extended on both sides of the log."<sup>70</sup> Other relics include plank bridges that spanned canyons, a number of "paddle-like scrapers," a ladder fragment found in the Long Room, torch remnants, "drill marks," two wood hoes, a "digging or cutting tool fashioned from a broken scythe blade," a "small hand shovel," and a "stirup-shaped wooden object, similar to a bag-mouth spreader."<sup>71</sup>

Davies states that Sinnett was mined during the Civil War.<sup>72</sup> But it seems a virtual certainty that this cave produced saltpeter long before and over an extended interval. In 1946, NSS cavers noted that the oldest date found in the big room to that point was 1772; however, its authenticity was uncertain.<sup>73</sup> The NSS had discovered the cave and the Long Room less than two years earlier, in late 1944.<sup>74</sup> A dozen years later Burton Faust described the cave, its saltpeter operation, and that first trip, when the cavers set candles along the entire length of the Hall of the Mountain King to better appreciate its great size. He rendered an imaginative depiction of a scene from the cave's past.

*"Our lights only dimly reached the sides and ceiling and as I sat there with my back braced against a rock, contemplating what must have transpired here many years ago; the present seemed to fade into the distant past. Candles and carbide lights metamorphosed into flaming, smoking, soot, and smut-spreading pine torches that were scattered in a random pattern. Dark, indistinct and misshapen*

*forms moved along the line of lights. One of these forms came closer and I could see that it was a hunched-over man carrying a large, heavy bag of some material.*

*"My eyes followed him as he shuffled along the path. I watched him as he passed torch after torch, sometimes climbing stone stairs, sometimes disappearing momentarily behind a large rock only to reappear further away. He reached the brink of the pit—stopped—hunched one shoulder and dropped the bag to the ground. He stooped, grasped the bag near the bottom, lifted it and dumped the load of dry, dusty, yellowish-brown dirt into the hopper. Great clouds of dust billowed and spread as the dirt rolled and tumbled down the slope to the lower level where other men were filling other bags with the precious dirt, after which it was laboriously carried to the surface."<sup>75</sup>*

Another major source of saltpeter was the "Big Cave," which opens in a crag near the crest of Cave Mountain not far from the upstream (southern) entrance of the 18-mile-long Smoke Hole Canyon.<sup>76</sup> Now known as Cave Mountain Cave, its uppermost passages must be some of the oldest in the Appalachians. They formed as tributaries of the South Branch of the Potomac, which has since eroded its bed to a level 800 feet below. As described by Davies, the four- by four-foot entrance expands into a corridor 2100 feet long and up to 35 feet high and 50 feet wide. A lower level of similar dimensions extends for 1700 feet. The walking, parallel passage of a smaller cave, "20 yards south and 50 feet above" Big Cave, continues for 1500 feet.<sup>77</sup>

Big Cave was mined for niter over an extended period, beginning in the colonial era. Morton states that it supplied saltpeter during the War of 1812.<sup>78</sup> The cave earth, excavated from the upper passage, was transported 800 feet down the mountainside to Big Spring for processing. The waters of Big Spring, "in volume sufficient to operate a mill," emerge at the river's edge almost directly beneath the cave. At one point Calhoun states that the peter dirt "was placed in canvas bags, and dragged down the steep mountain"; at another, that the cave earth was conveyed by "spouts." Perhaps the miners employed each of these methods at different times. Leaching and boiling took place at Big Spring. Lingering indications of this niter works included the "huge mounds" of spent peter dirt conspicuous at Big Spring and several of the large boiling kettles still to be found in the Smoke Hole. These were still much in evidence in the 1920s and early 1930s when Calhoun wrote his articles.<sup>79</sup>

Further north in the Grant County section of the Smoke Hole, the entrance of Peacock Cave lies at the

foot of a massive limestone cliff high on the west side of Cave Mountain. A crawlway leads to a series of very dry rooms and passages that total perhaps 1000 feet.

Caleb Peacock discovered the cave and mined its earth for saltpeter. The traditional date associated with this endeavor is 1808, but one source dating from 1908 notes the initials "C.P." and "1807" chiseled into a wall, and asserts that Peacock produced gunpowder from the cave's niter during the War of 1812. The 1908 source reported "two artificial ladders," but Davies described the remnants of the saltpeter mining as "an old ladder and wooden platform 600 feet from the entrance."<sup>80</sup> A 1970 trip report noted additional artifacts and attempted some analysis of the mining operation.

*"About halfway to the present end there is a ladder (now broken and completely untrustworthy) at the foot of an upwards shaft. At two levels within the shaft there are wedged poles, one of which seems to have acted as a catchment for earth dumped from the upper level for retaining the petre-dirt for bagging. On the upper level there are numerous two- to three-inch pieces of cedar, unburned and, according to my guesstimate, used for fuel for firepots. This upper level is the most obviously worked area in the cave, although paddles are occasionally visible in other parts of the cave."<sup>81</sup>*

In 1924, geologist David B. Reger published his investigation of a report that within Peacock Cave was "a valuable deposit of saltpetre." A "soft and sticky ocher, having a rich red color and thicknesses that vary from four inches to one foot or more" filled some of the cave's crevices between points 600 and 750 feet from the entrance. Peacock mined this ocher and carried it to the river, his nearest source of water. There he report-edly mixed the ocher "with hickory wood ashes in a wooden hopper and by pouring water on the mixture obtained a filtrate from which his gunpowder was concentrated."

Reger believed this to be "quite certain" because the location of the hopper could be identified by "a large amount of red soil which is quite different from the natural sandy loam." But the analysis of the ocher revealed no potassium nitrate (would not calcium nitrate suffice?), leading Reger to the conclusion that "the potash of the wood...was evidently the true source of the explosive material." Thus the implication that the extremely strenuous labor of Peacock in mining and transporting the cave ocher was completely futile.<sup>82</sup>

There were other powder makers in the Smoke Hole community. One was Peter Mozer, who operated "a crude mill for making gunpowder in the run that flows past the old Palestine Church." On one occasion his



mill exploded, and Mozer lost an ear but not his life. At another time Mozer was questioned about the quality of his powder. He responded that it was quite potent, citing a recent experience when a portion had caught fire and been consumed before he could extinguish the blaze.<sup>83</sup>

In addition to Big Cave and Peacock Cave, H. M. Calhoun asserted that two other caves within the Pendleton County section of the canyon had been mined for saltpeter. These were Smoke Hole Cave and Old Mines Cave, the latter located in the vicinity of the Maple Dale School.<sup>84</sup> To this writer's knowledge, there is no extant physical or documentary evidence to prove that either ever produced niter.<sup>85</sup> A "small wooden paddle" or "scoop" displayed at the Hawks Nest Museum, "found 1/2 mile back in Smokehole Cave" and "used by early settlers in taking material from...(the) cave for the purposes of making gunpowder," almost certainly refers to Cave Mountain Cave (or Big Cave).<sup>86</sup>

Caleb Peacock has associations with both the Grant and Pendleton sections of the Smoke Hole. His name is remembered in Peacock Cave and Peacock Spring in Grant County and Peacock Island in Pendleton County. He has entered into the local folklore.

*"It is related that at one time William Cox and Caleb Peacock were in the Smoke Hole Cave, digging earth from which to extract nitre, an essential ingredient in the manufacture of gun powder, then made locally, and so necessary to their protection against the Indians and in keeping the family larder filled.*

*"Peacock was a man of deep religious character, while his companion was directly the opposite. In fact he is said to have possessed a vocabulary including all of the fifty-seven varieties of naughty swear words, and in the course of his pioneer life had acquired a wonderful proficiency in their use. While at work they unwittingly closed the opening through which they had entered, with the earth that they were digging, and about the time that their only light gave out. This left them in about as bad a predicament as one could well imagine.*

*"Very naturally, Peacock began to pray fervently, and just as naturally, Cox began swearing just as fervently. Perhaps the praying voltage of the one was not of a very high order, and the swearing qualities of the other correspondingly as ineffectual. Anyhow, neither seemed to have the desired effect. When this fact dawned on the prisoners they began prodding around until they found a spot where the earth was more yielding and*

*dug their way out from their earth and stone prison.*

*"Later some person attempted to impress on the profane Cox a valuable lesson from this experience. He sought to convince him that their deliverance was due in some measure at least to super-natural causes, and finally said: 'Now, Cox, don't you think that the Lord was with you?' To which Cox replied: 'If he was, he was in one hell of a fix.'<sup>87</sup>*

The cave in the Harman Hills of Germany Valley, now known as Schoolhouse Cave, apparently served as a source of niter since the earliest European settlement. It supplied saltpeter for the manufacture of gunpowder at Hinkle's Fort, four miles away, possibly as early as 1758 and continuing through the Revolution. The cave was again pressed into service during the War of 1812.<sup>88</sup> It is the only known Pendleton saltpeter cave on the drainage of the North Fork.

The spacious and imposing portal of Schoolhouse Cave opens from a sink into a chamber 40 feet wide, up to 70 feet high, and 150 feet long. This gallery's floor slopes steeply; at its end an abrupt ascent of 75 feet leads to a narrow passage 500 feet long and up to six feet high. Much of this passage, once nearly or completely filled with clay, "to within eight to 14 inches of the roof," is a trench excavated by saltpeter miners. It leads to the edge of the Big Room. Here the floor disappears into pits and wells which plunge to depths of 200 feet. Not until 1939 would an explorer descend this forbidding precipice. In marked contrast to the ups and downs of the floor, the ceiling of the cave remains rather flat throughout its length.<sup>89</sup>

The cave earth was dug from the trench which cleared much of the passage leading to the Big Room. Mattock marks are still clearly observable.<sup>90</sup> To transport the peter dirt from the upper trench passage directly to the surface, avoiding the steep descent into and the even more arduous ascent out of the entrance chamber, the miners built an elevated tramway.

*"They constructed a wooden track part of the way down the incline, and then across a scaffolding or bridge work that they built up for the purpose, to the entrance of the passage referred to. They then gathered up all the log chains in the neighborhood round about and welded them into one long chain. They constructed a rude car fitted to run on the track.*

*"They next constructed a device outside the mouth of the cave, similar to the old-time wooden cider mill with a long lever or sweep, to the end of which a horse or horses were hitched. By driving the horse or horses around and around, the chain was wound*

*around a cylinder-like device, and the car heavily laden, hitched to the other end of the chain, came slowly with a great deal of creaking up the steep incline to the world outside with its burden of niter-laden dirt.”<sup>91</sup>*

The presence of such an elaborate structure and the use of a wheeled vehicle within the cave is a unique occurrence in the history of Pendleton's niter industry.

For many years there were two vertical posts just inside the entrance, below which a “hand-hewn trough” collected water from a small seep or spring. The posts supposedly had some function with regard to the tramway. The trough was a source of water for the Cave School, 100 yards to the south, which was in operation at least by the 1890s, and for an earlier log building on the same site, perhaps much earlier. The trough may date back to the era of niter mining, but this is uncertain.<sup>92</sup>

One might speculate that the small spring at the entrance could have provided the water for the leaching vats and boiling kettles. This would have been most convenient, but evidence is lacking. Perhaps the spring was inadequate in volume or persistence. According to Calhoun, the miners hauled the peter dirt to the site of the residence (in 1931) of Jacob Harman, some distance away in the direction of Harper Gap. Before constructing his home, Harman had to remove “huge piles” of leached cave earth.<sup>93</sup>

The remaining Pendleton saltpeter operations were conducted on a lesser scale than those described above. An example is Cave (Cove) Knob Cave located atop a hill west of the South Branch River very near the boundary with Highland County, Virginia. A low entrance passage leads into a sloping room 40 feet long and 25 wide, with a ceiling height of five to eight feet. Davies reported that the cave was mined during the Civil War and that “mattock marks are clearly visible in the excavated area.”<sup>94</sup> Other evidence within the cave, cited by Hauer in 1969, includes:

*“A blasted trench in the western entrance passage (with drill marks clearly visible), and mattock marks and faggots in the terminal area. One faggot (pine torch) was noted implanted into the mud of a digging, apparently there since the Civil War.”<sup>95</sup>*

The leaching of the peter dirt reportedly took place at the river just below the knob. The small stream flowing into the South Branch from the east, just south of the knob, is labeled “Saltpetre Run” on an old deed; this may also have served as a leaching site. “A large old kettle, reputedly used at the cave, is located on a farm about a half-mile north.” This was a small operation.<sup>96</sup>

Three possible niter caves can be found along the gorge of Thorn Creek. West of the stream on Horner Mountain is Huffman (Hoffman) School Cave. It consists mainly of a single linear strike passage approaching 1000 feet in length. Its cross section varies greatly with maximum dimensions of 30 by 30 feet. Little is known beyond Davies' statement that “75 feet from the entrance a passage opens to the west as a low crawlway excavated by saltpeter miners....”<sup>97</sup>

A local tradition holds that Max Harper made gunpowder on Thorn Creek near this cave sometime in the mid-19th century.<sup>98</sup> Minor Rexrode Cave on Neds Mountain east of Thorn Creek is somewhat similar to Hoffman School in pattern and dimensions.<sup>99</sup> It has not generally been recognized as a saltpeter cave. On the basis of physical evidence, however, Hauer describes it as a “small to medium” operation, with “extensive digging in the first few hundred feet, with marks, faggots, and wood remnants remaining.”<sup>100</sup>

The Amick powder mill operated near Powder Mill Hole on Thorn Creek and “is believed to have obtained its saltpeter from the Minor Rexrode Cave.”<sup>101</sup> Tory Cave is also in this vicinity. If its entrance collapsed during the Revolution, then it obviously was not mined. But another version of its history asserts that the collapse did not occur until the Civil War, in which case it might have served as an antebellum source of nitrates. Without access to the cave's interior, the magnitude and nature of its niter operation cannot be determined, if indeed it ever existed.

There is evidence for at least two niter works and two powder mills along Thorn Creek or its tributaries. One site for processing saltpeter was on Dry Run; its use is associated with, but may not be limited to, the Civil War. The other was at Sinnett Cave. The two powder works, already mentioned, were those of Max Harper and John and Catharine Amick. More information is available concerning the latter, which was destroyed in an explosion.

*“The late Gilbert Pitsenbarger said it was believed that a nail got into the powder that caused the explosion. He said the mill had a wooden stomper to crush the materials which was run by water power. Early one morning, John and Catharine Amick started up the mill and had gone home for breakfast for they had a number of children at home when the mill exploded. Mr. Pitsenbarger said he remembered seeing a log of the mill hanging in the fork of a tree many years later... the neighbors heard the explosion and expected to find a house full of orphaned children.”<sup>102</sup>*

Following the destruction of their powder mill, the

Amicks left Pendleton and settled in Nicholas County, probably in 1835. There they operated a grist mill and sawmill, safer devices not prone to explosions.<sup>103</sup>

Mill Run Cave is located in a cliff along Mill Run just south of Kline. The cave consists primarily of a single linear passage about 1000 long, "with an average height of 30 feet and width of 15 feet." According to local tradition, the cave was mined for niter in the early 19th century.<sup>104</sup> The first 100 feet of dry passage, up to eight feet high, follows a 20-foot entrance crawl, and contains the only section with evidence of mining. It is labeled the "Saltpetre Passage" on a 1970 map. Hauer described this operation as "very small" with "little physical evidence," which included "some diggings with mattock marks and a few fagots." He also refers to "a large saltpetre boiling kettle, used by the entire Kline area population in pre-1865 days," and which "was washed away from its location near the old mill at Kline in the late 1940s (in the 1949 flood?) and never recovered." He also found "no evidence of significant early visitation beyond the dry entrance passage."<sup>105</sup>

Peter Run Cave is located three miles north of Franklin on the north side of a small gorge cut by Peters Run through an Oriskany-Helderberg arch. This small cave consists merely of two dusty parallel crawlways extending 90 feet from the entrance shelter. Its scale of exploitation for niter was equally small.

*"The cave is reported to have been mined for saltpetre by the Indians, but this was undoubtedly a Civil War (or Pre) operation. The entire cave seems to have been dug out. A few faggot torches were found, and some poorly preserved mattock marks. About 1923, a group of Boy Scouts removed several scrapers and other relics from the cave and burned them. Some sort of pipe or slide device is reputed to have been used for dropping the dirt to the level of Peter Run where it was leached. Only a few vat-fulls of dirt could have been removed from this cave."<sup>106</sup>*

Not far away, across the South Branch from Ruddle, is Mandy Walters Cave. The presence of mattock marks and drill holes in this small cave offers definite evidence that it was mined for saltpeter.<sup>107</sup>

#### CAVE EXPLORATION BEFORE THE CIVIL WAR:

Not all the antebellum Pendleton cave references pertain to niter mining. There was interest in caves as natural phenomena. One dimension was a rudimentary concern with karst features to further descriptive science. Another was the fascination of ordinary people with exploration and adventure.

In December 1831, a collection of some of the most prominent and distinguished men in the Old Dominion met in Richmond to form the Virginia Historical and Philosophical Society. Ultimately, this organization would restrict its interests solely to history, becoming the Virginia Historical Society in 1870. But initially, its members sought to discover and study the natural features of the state as well. In November 1833, Benjamin Dolbeare, a Randolph County physician, sent a letter to the society's recording secretary, in which he enclosed specimens of stone and "2 Rattle Snakes teeth" and rattles, accompanied by commentary. With the peculiar spelling and style typical of the time, his letter also reported on several caves, one of which would seem to describe Randolph County's Sinks of Gandy Creek.

*"Between, what is here called, the Aleghany and Rich mountains, heads a branch of the dry fork a tributary of Cheat River, a ridge extends itself quiet across, from one mountain to the other, and this branc(h), after keeping its course about 3 miles runs under this ridge which (is) about 3/4 of mile wide at its base, and very high."<sup>108</sup>*

Dolbeare also described certain phenomena of karst hydrology in Pendleton County.

*"Reeds Creek a tributary of the S. fork of the Potomac, after it runs 3 miles sinks under the N. mountain, and appears again at the western base, a distance of 4 miles the way the road goes, w(h)ere stands a grist-mill, with sufficient water to grind, this fact has been proved, by putting chaf and brand on the opposite side, which came through, this water empties itself into the N. fork. This is in Pendleton county."<sup>109</sup>*

The good doctor seems to assert that the waters sinking in Reeds Creek resurge at Germany Valley's Judy Spring. Despite the alleged crude tracing experiment cited as "proof," this contention seems astronomically improbable. Reeds Creek sinks in Silurian-Devonian limestones; Judy Spring issues from Ordovician limestones. They are separated by thousands of feet of insoluble strata. Also, Reeds Creek is located in the South Branch Valley, not the South Fork Valley.

Sometime in the 1850s, probably in 1854 according to his biographer, the popular and versatile artist-author David Hunter Strother toured the South Branch Valley of Hampshire and Hardy, Pendleton's North Fork, and the wilds of eastern Randolph (which until 1856 included Tucker). Not for two decades was an illustrated narrative of this journey published. Entitled *The Mountains* and presented under the pseudonym "Porte

Crayon," it appeared in ten installments in *Harper's New Monthly Magazine* between April 1872 and September 1875.

Within the framework of a travelogue, *The Mountains* is a tale of a month-long expedition of nine people, five gentlemen sportsmen and four ladies, seeking diversion and adventure. Rendered in a humorous literary style, perhaps most reminiscent of Washington Irving, the romantic subplot is fiction, and the characters sometimes seem eccentric caricatures. Yet there is often "painstaking realism" in Strother's depiction of mountain landscapes and people, and his work is considered fairly accurate social history. His drawings and descriptions of the Roaring Plains, the crags and arches of the North Fork (including the "cliffs of Seneca"), and Blackwater Falls are recognizable to modern cavers who frequent these places, as are the surnames of mountain folk.

Strother portrayed the South Branch, especially "the celebrated valley of Moorefield, the garden of Virginia," as a favored locale with prosperous farms, "handsome brick residences," fat cattle, and fine horses. The inhabitants residing on the broad bottomlands were wealthy, intellectually and socially cultivated, hospitable, and "among the best equestrians in Virginia." But primitive, frontier conditions lingered in the Dry Fork area of eastern Randolph County, and especially the Canaan area was an incompletely explored "back of beyond" in the 1850s. Though his portrayal was not idealized, Strother admired the self-sufficient independence of the mountaineers.<sup>110</sup>

By temperament, family background, and life experience, Strother was and would remain a gentleman of Old Virginia. But he was also a nationalist, and with the advent of Civil War cast his fortunes, however reluctantly, with the North, rising to the rank of brigadier general in the Union Army. His biographer interprets his glowing depiction of the South Branch especially as a "subtle rejection of the Old Dominion," and a reflection of his desire "to focus on the glories of West Virginia." He would become the first important West Virginia literary figure, a representative of the "local color" school.<sup>111</sup>

The members of the party of adventurers featured in Strother's tale, their personality traits suggested by their names, include such characters as the Mexican War veteran Major Martial, the beautiful young widow Rhoda Dendron, the New England schoolteacher Prudence Primrose, and the lighthearted youth Richard Rattlebrain, who "has not brains enough to take tragic views of anything."

Porte Crayon is represented by Lawrence Laureate,

who agonizes over the choice between a life of action as opposed to one of poetic contemplation. Throughout Laureate and the Major are competitors for the affections of Rhoda. But typical of the local color genre, the characters and plot are secondary to the depiction of mountain life and landscapes. Among many episodes are a successful bear hunt on the wild, windswept Roaring Plains, a visit to Adamson's store at Mouth of Seneca, and following the return from eastern Randolph, a tournament at Moorefield, where Laureate, Martial, and Rattlebrain compete as knights.<sup>112</sup>

From the perspective of speleohistory, the high point of this expedition was a visit to the Sinks of Gandy, "the *ultima thule* of Anglo-Saxon civilization." Gandy Creek is a north-flowing tributary of Dry Fork of Cheat River in eastern Randolph County. Near its headwaters this stream follows a subterranean course for almost 3000 feet under a spur of Yokum Knob. Situated in one of the highest karst areas in the Appalachians, the cave's picturesque south portal, is an opening 30 feet wide and 15 feet high in a Greenbrier limestone bluff, at 3500 feet elevation. The dimensions of the main stream passage vary from 30 to 60 feet in width and six to 30 feet in height.<sup>113</sup>

In the 1850s the road to the Sinks was "not much more than a cattle path," and the pristine waters of Gandy Creek yielded prodigious numbers of fish with no particular skill or effort required on the part of the anglers. Along the way the adventurers meet such mountain people as the patriarch Soldier White, Aaron Armantrout, Jesse Hetterick, Dilly Wyatt, and nimrod Tom Mullinx. For these isolated folk a visit to Franklin or Beverly represented an encounter with civilization.<sup>114</sup> In sharp contrast to today's blue grass pastures at the Sinks, virtually the entire region was covered with a virgin hemlock forest and a tangled understory of laurel and rhododendron. Porte Crayon's drawing of the southern, upstream "entrance to the tunnel of Gandy" reflects a high degree of verisimilitude, though the text exaggerates its dimensions. In poetic language he describes their approach where

*"descending by an easy slope, (we) entered a glen of singular beauty. Hemmed in between a steep and rugged hill-side and a savage forest of dark-browed hemlocks, it lies soft and smiling...; while through the midst winds the sparkling amber-tinted stream of Gandy.*

*"Looking up the glen, the vista is bright as fairy-land, ending with a distant glimpse of blue hills. Turning down stream, a grim, menacing cliff rises square athwart the glen, closing it suddenly and shocking you with its unexpected propinquity. At its base is an arched opening 50 feet wide by about 20 in height—a*

*gaping mouth which swallows the little river at a gulp. There is no gurgling nor choking, but the stream glides in gently and lovingly, like a young snake running down its mother's throat to sleep,... Altogether the scene is peculiar and impressive...*

*"Wading in some 40 or 50 yards, we find the subterranean stream still smooth and practicable, without any roaring or other indication of an interruption in its current. But its winding course soon shuts out the daylight, and as we had no torches, no attempt was made to push our exploration further.*

*"It is said that persons have made their way through the tunnel, and the estimated distance from entrance to exit is a mile and a quarter. The distance around by the road is about two miles. The information on the subject was both vague and meagre, as the mountaineers are usually totally indifferent in regard to these natural curiosities, or superstitiously timid about undertaking an exploration. In fact, no one cared to talk about the tunnel of Gandy, and the idea haunted me that there was some mystery connected with the place which made the mountaineers rather avoid the subject."<sup>115</sup>*

With considerable literary license, the narrative portrays the interior of the cave through the adventure of Richard Rattlebrain. One afternoon, guided by mountain lass Peggy Teters part of the way, the party travel on horseback to the upstream entrance of Gandy, at which point Dick, miffed by some unfriendly comments by Prudence Primrose, impulsively decides to leave his companions and travel on foot overland to the lower entrance, expecting to rejoin the party and reclaim his horse at that point.

But the rough terrain and laurel thickets slow his progress and, when his companions arrive at the upstream entrance, Dick is nowhere to be seen. The party, tired of waiting, return to their lodging at Soldier White's. Laureate, anxious for Dick's safety and lingering for a time, climbs the rise above the stream's exit and presently shoots a wolf. In the waning daylight hours, both Laureate and Rattlebrain have disconcerting experiences in the eerie and desolate forest above the cave, each half imagining that his senses are playing tricks on him. Each thinks he hears voices, or perhaps "a sound of water deep underground—a strange sort of moaning and whispering." Each detects the pungent aroma of smoke from a wood fire, seeming to arise from crevices leading to the depths below. Each catch a chilling and fleeting glance of a stealthy menacing figure moving through the forest.

Laureate nearly falls into a pit, imagining for a moment that in the black void he sees sparks. Meanwhile, Dick, in a distracted mental state exacerbated by his wild and lonely surroundings, stumbles into a sinkhole shaft (whether the same or a different one is not made clear), from which he cannot extricate himself. He finds himself in the tunnel of Gandy in the midst of a gang of outlaws, possibly cattle rustlers, transacting their nefarious business about a roaring driftwood fire. Unable to convincingly explain his presence, he is bound and left by the fire with a heavily armed guard.

After an interval of exhausted sleep, he is awakened by a mysterious young mountain woman, who has induced a deep slumber in the sentinel with the aid of a flask of apple brandy. In the darkness of the cavern, and with the fire burning low, Dick is unable to identify his rescuer. She leads him through the cave, at one point diving into a sump, with Dick clinging to her in frantic desperation, and emerging on the other side in total darkness. Without lights of any kind, they follow the stream current to the upper entrance and exit into a glorious starlit night.

Dick's savior vanishes before he can ascertain her identity, but bone weary, famished with hunger, bleeding, his soaked clothes in tatters, Dick is safe. Later, when he recounts his story to his companions, they assume the mysterious woman to be Peggy Teter, which Dick stoutly denies. His friends also express doubt as to the veracity of Dick's tale, attributing it to an extravagant imagination or a dream induced by strong drink.<sup>116</sup>

It is a virtual certainty that the adventuresome Strother and his comrades explored the cave, and his account suggests a vague familiarity with its passages. Perhaps he noted certain features, exaggerating and rearranging them for the purposes of his story. The 1940 map shows a sinkhole and "chimney choked with rubble" about 600 feet from the downstream entrance, through which Dick Rattlebrain might fall. And there is a "curtain of rock" or "duckunder" (Jack Preble made much of this) leading to the dry downstream entrance, but there is no siphon requiring complete immersion, unless at very high water. Also his illustration and verbal description of the north entrance, "three arched passages side by side in a perpendicular cliff," does not correspond closely to the two exits which exist today, a lower wet one through the stream and a higher dry one.<sup>117</sup>

There is much evidence to dispute Porte Crayon's assertion that "mountaineers are usually totally indifferent in regard to these natural curiosities or superstitiously timid about undertaking an exploration."

Local people often displayed a sense of curiosity and adventure toward their caves. An example is Mitchell Cave, located on the northwestern flank of Sweedlin Hill in Pendleton County. Of hundreds of names, initials, and dates found in the cave, at least ten record visits during or before 1860, the earliest of accepted authenticity as far back as 1808.<sup>118</sup>

The first explorers known to penetrate the tortuous entrance crawlways leading to the large room in (Kenny) Simmons Cave inscribed the date on a wall—7 May 1847.<sup>119</sup> Among the dates from Kee (Key) Cave on Friends Run near Franklin are two from 1856, recording visits in July and August of that year. Accompanying inscriptions include “Franklin, Virginia” and the state motto, *Sic Semper Tyrannus*. The many names and dates indicate that excursions to this cave were a popular pastime in the mid-nineteenth century.<sup>120</sup> Such examples could be multiplied at great length.

#### ENDNOTES:

<sup>1</sup> Douglas W. Plemons, “The Niter Gardener’s Guide and Home Companion: The Saltpeter Cave Survey, 1994,” *Journal of Spelean History*, January-March 1995, V29p39. This list identifies 669 saltpeter caves in 15 states. West Virginia has 55 and Virginia, 81. Those counties with ten or more listed caves number 17; those with eight or more, 28. Only six counties have an equal or greater number of listed niter caves than Pendleton. These are Jackson (AL-18), Fentress (TN-15), Grundy (TN-17), Van Buren (TN-16), Greenbrier (WV-18), and Bath (VA-14). A “Site Determination Assessment” accompanies each cave name: D for “definitely mined,” S for “suspected to have been mined,” and Q for a “questionable site.” The 14 caves listed for Pendleton include Cave Knob (Q), Cave Mountain #1 (D), Cave Mountain #2 (Q), Franklin Saltpeter (D), Hamilton (D), Huffman School (Q), Mill Run (D), New Trout (D), Peter Run (D), Saltpeter (D), Schoolhouse (D), Sinnott-Thorn Mountain (D), Tory (Q), and Trout (D). Saltpeter, despite its name, and Hamilton should be deleted from this list; there is no evidence of mining in either. Minor Rexrode Cave and Mandy Walters Cave should be added—this is from a Fred Grady letter, January 21st, 1997; Davies’ *Caverns of West Virginia*, p234; Saltpetre Cave Report Form: Minor Rexrode Cave; and the Peter M. Hauer papers. This writer has in his possession photocopies of items from the Hauer collection pertaining to Pendleton County and the Virginias. Many of these items are notes in unpolished form.

<sup>2</sup> De Paepe and Hill, *Historical Geography of United States Saltpeter Caves*, p88.

<sup>3</sup> Faust, *Saltpetre Caves and Virginia History*, p36; Monte Alan Calvert, “The Search for a Domestic Source of Saltpetre for Use in Making Gunpowder, 1620-1920,” *Hagley Museum Research Report*, 1961, p10-12; Stuart S. Sprague, “Saltpeter and the War of 1812,” *MET Grotto News*, V16n2p20-22; Hauer, *Saltpetre Mining in West Virginia*, p45; Marion O. Smith, *Saltpeter Mining in East Tennessee* (Maryville, 1990), p2-3; and Carol A. Hill and Duane DePaepe, “Saltpeter Mining in Kentucky Caves,” *Register of the Kentucky Historical Society*, 1979, V77p247.

<sup>4</sup> Quoted in Faust, *Saltpetre Caves and Virginia History*, p37.

<sup>5</sup> Saltpeter and gunpowder numbers often seem inconsistent; it can be doubted that the yields of small niter operations are included in aggregate numbers with any regularity.

<sup>6</sup> Sprague, “Saltpeter and the War of 1812,” figure 2, p29.

Production numbers were taken from *Niles’ Weekly Register*, May 30th, 1821, #39p213.

<sup>7</sup> Tench Coxe, *A Statement of the Arts and Manufactures of the United States of America for the Year 1810* (Philadelphia: Printed

by A. Cornman, 1814), p109-14. Virginia’s aggregate 1810 saltpeter production of 59,175 pounds was valued at \$16,243.88. The two Kentucky counties outproducing Pendleton were Montgomery (44,575 pounds) and Wayne (51,785 pounds). Warren County, location of Mammoth Cave, yielded 22,850 pounds. In 1810 there were 63 powder mills within Kentucky; these produced 115,716 pounds valued at \$38,561. Kentucky output of saltpeter was 201,937 pounds worth \$33,648. East Tennessee produced \$26,426 worth of gunpowder and \$2,913 worth of saltpeter. The Western District of Tennessee had 21 powder mills, the output of which was 44,373 pounds valued at \$22,186.50. Western Tennessee had 22 saltpeter caves which produced 144,895 pounds worth \$18,326.16. *Ibid.*, 125-28, 138-39, 142-43.

<sup>8</sup> Duane De Paepe, *Gunpowder from Mammoth Cave: The Saga of Saltpetre Mining Before and During the War of 1812* (Hays, Kansas: Cave Pearl Press, 1985), pages 7 and 32-33. The market price per pound of niter rose from about 17 cents in 1810 to 75 cents/one dollar during the war years.

<sup>9</sup> *Pendleton County*, p94.

<sup>10</sup> *Ibid.*; Smith, *Saltpeter Mining in East Tennessee*, p7; Gary A. O’Dell, “Bluegrass Powdermen: A Sketch of the Industry,” *Register of the Kentucky Historical Society*, Spring 1989, V87p109.

<sup>11</sup> *Pendleton County*, p94.

<sup>12</sup> *Digest of Accounts of Manufacturing Establishments in the United States, and of Their Manufactures*. This was published under direction of the Secretary of State, in pursuance of a Resolution of Congress, of March 30th, 1822. (Washington: Printed by Gales & Seaton, 1823).

<sup>13</sup> *Ibid.* For Pendleton County, the census described only the Trout Rock niter works, but there was probably other saltpeter production and certainly numerous other establishments such as gristmills, sawmills, distilleries, tanneries, blacksmith shops, etc.

<sup>14</sup> *Census of the Enumeration of the Inhabitants and Statistics of the United States* (Washington: Printed by Thomas Allen, 1841), p174. Virginia’s total 1840 gunpowder production from all ten mills was 2,850 pounds. Giles, Washington, and Wythe counties had two mills each. Georgia and Alabama had no powder mills in 1840. Tennessee had ten mills yielding 10,333 pounds. Kentucky’s eleven mills produced 282,500 pounds. *Ibid.*, 174, 210, 222, 258, 270.

<sup>15</sup> Jos. C. G. Kennedy, Superintendent, *Abstract of the Statistics of Manufactures According to the Returns of the Seventh Census*, p96.

<sup>16</sup> *Manufactures of the United States in 1860* (Washington: Government Printing Office, 1865), p626.

<sup>17</sup> Morton, Oren F., *Pendleton County*, p215.

<sup>18</sup> *Ibid.*, p265.

<sup>19</sup> *Ibid.*, 492; Ricketts, *History of the Trout Rock Cave*, 298.

<sup>20</sup> Morton, *Pendleton County*, pages 278 and 281.

<sup>21</sup> Faust, *Saltpetre Caves and Virginia History*, p37.

<sup>22</sup> *Pendleton Times*, February 15th, 1996, p5.

<sup>23</sup> Calhoun, *Caverns of Pendleton*, p1.

<sup>24</sup> *Pendleton Times*, February 15th, 1996, p5. Hively Gap is on South Fork Mountain on the road (present U.S. Route 33) between Franklin and Oak Flat. Although not shown on topographic maps, presumably Hively Gap Run flows eastward toward the South Fork River at Oak Flat.

<sup>25</sup> *Ibid.*

<sup>26</sup> Jane S. McColloch, *Springs of West Virginia*, Vol. V-6A (West Virginia Geological and Economic Survey, 1986), p293.

<sup>27</sup> Garton et al., “West Virginia’s Trout Rock Caves Purchased by the NSS,” p129; (Johnny Arvin Dahmer), “Sumwalt Gap Sign To Be Relocated To Correct Spot,” *Pendleton Times*, June 5th, 1997, p5. According to this last article, the Department of Highways plans to replace the road sign “Sumwalt Gap” with one which reads “Powder Mill Hollow.”

<sup>28</sup> Hopeville and Upper Tract Topographic Quadrangles, USGS 7.5’ Series.

<sup>29</sup> Saltpetre Cave Report Form: Cove Knob Cave. Peter M. Hauer papers.

- <sup>30</sup> (Johnny Arvin Dahmer), "Abundance Of Fish Once Found At The Trout Rock Water Hole," *Pendleton Times*, July 10th, 1997, p5. The construction of the Franklin and Monterey Pike partially filled this hole and diminished the quality of this ideal trout habitat.
- <sup>31</sup> Angelo I. George, "Saltpeter and Gunpowder Manufacturing in Kentucky," *Filson Club History Quarterly*, April 1986, V60p189-217. George's concluding statement emphasizes that "adequate transportation was the primary criterion used for the selection of saltpeter sites for mining development and the location of gunpowder factories."
- <sup>32</sup> Ricketts, *Trout Rock Cave*, p298; Morton—*Pendleton County*, p326—lists a John Mifford under pioneer families no longer represented in Pendleton in 1910. These were not included among 1790 tithables but lived in Pendleton before 1802.
- <sup>33</sup> Ricketts, *Trout Rock Cave*, p298-99.
- <sup>34</sup> *Ibid.*, p299; *Manuscript Census of Manufacturing for 1820: Virginia*. Call No. M-2, Roll No. 18, p. 218. National Archives Microfilm Publications. Special Collections and Archives, King Library North, University of Kentucky.
- <sup>35</sup> Morton, *Pendleton County*, p359.
- <sup>36</sup> Martin, *Gazeteer of Virginia*, p416.
- <sup>37</sup> Ricketts, *Trout Rock Cave*, p299.
- <sup>38</sup> *Ibid.*; Morton, *Pendleton County*, pages 227, 238, 373, 418. In 1867 McCoy conveyed the Trout Rock caves property to the heirs of William Hiner (1822-1862), who died as a militia member in Confederate military service. William had married Catherine Kee, daughter of James B. Kee and granddaughter of Aaron Kee.
- <sup>39</sup> Calhoun may have contributed to this confusion since he sometimes referred to the saltpeter cave at Trout Rock as Hamilton Cave, when he really meant Trout Cave. *Caverns of Pendleton*.
- <sup>40</sup> Davies, *Caverns of West Virginia*, pages 212-13, 227-28, 251-3; Faust, *Saltpetre Caves*, 37; Garton *et. al.*, *Trout Rock Caves*, 128. As of July 1995, Hamilton Cave had been surveyed to a total length of 4.6 miles with an internal relief of 240 feet. New Trout exceeded 2.5 miles in length with a vertical extent of 120 feet. Trout Cave's aggregate surveyed passage was almost 2.3 miles and relief 91 feet. Bob Gulden, *USA Long Cave List*, July 10th, 1995.
- <sup>41</sup> Faust, *Saltpetre Caves*, p40; Calhoun, *'Twixt North and South*, p111. Calhoun interviewed surviving Civil War veterans in the early 1900s and possibly even before. He often published his historical sketches, including those pertaining to niter and other caves, in the county newspapers. He refers to only one cave, presumably Trout (Big Cave), and one trough or slide at Trout Rock. Yet there is abundant evidence that New Trout (Little Cave) was nearly or quite as important a source of niter. While undocumented, it seems likely that New Trout, 90 feet lower in elevation than Trout, also had some kind of slide or trough to carry the peter dirt to the valley floor. If it happened that both caves were being mined and there was only one trough, it seems logical that, for the greater gain in efficiency, it would serve the higher and less accessible entrance. It is also possible that New Trout's niter-bearing earth had been mined nearly to exhaustion before the Civil War. Faust states that in New Trout "a small quantity of petre-dirt still remains, although...this cave was thoroughly cleaned." If the "cleaning" occurred before 1861, this might explain the reference to only one active niter cave and one trough. Also the brief 1835 quotation from the *Gazeteer of Virginia*, reproduced above, mentions only one cave, and its entrance location and description fit New Trout far better than Trout. Perhaps the earth from the lower and more accessible Little Cave had been mined more intensively earlier, leaving the Big Cave as the sole or primary focus of activity during the Civil War. The evidence for this line of argument is suggestive but inconclusive.
- <sup>42</sup> Burton Faust, "Saltpetre Mining Tools Used in Caves," *NSS Bulletin*, December 1955 V17p8; Faust, *Saltpetre Caves*, p31; Smith, *Saltpeter Mining in East Tennessee*, p1. A detailed and technical treatment of the niter production process can be found in Burton Faust, *Saltpetre Mining in Mammoth Cave, Ky.*, p58-64.
- <sup>43</sup> In Kentucky's Mammoth Cave, an elaborate system of wooden pipes carried water by gravity flow from a waterfall at the historic entrance to the leaching vats, while the nitrate liquor was pumped through a second wooden pipeline to the surface boiling furnaces. De Paepe, *Gunpowder from Mammoth Cave*, p14-15. A log pipe system was also used at Big Bone Cave (Van Buren County, Tennessee) and possibly also Organ Cave (Greenbrier County, West Virginia), among others. Leach water for two Virginia caves, Buchanan Saltpeter (Smyth County) and Tawney's (Giles County) came from streams within the caves. Larry E. Matthews, *Descriptions of Tennessee Caves*, Bulletin 69 (Nashville: Division of Geology, 1971), p15-16; Burton Faust, *Caves, Caravans, and Cannons*, unpublished typescript, III-13, p31-32, Box 2, File 7, Faust Collection, Department of Library Special Collections, Manuscripts, Western Kentucky University, Bowling Green, Kentucky. Nothing comparable to the above was found in Pendleton County.
- <sup>44</sup> Faust alludes to the water wheel as an "unconfirmed report," but at least partial confirmation can be found in a separate reference to a millrace. *Caves, Caravans, and Cannons*, note, III-47.
- <sup>45</sup> *Manuscript Census of Manufactures*, 1820.
- <sup>46</sup> Interview with Hendron Waggy, Franklin, WV, no date. Faust Collection, Box 3, File 3; Faust, *Caves, Caravans, and Cannons*, III-36. In Box 3, File 2, there are brief notes referring to Herndon Waggy, Moyers, WV (on Hoover Mountain). Waggy, obviously having derived his information second-hand from conversations with his father, seemed to be aware of only one active niter cave and one trough at Trout Rock. It was recalled that a Martin Moyers hauled ashes from Jack Mountain, and that a John Patenberger (Pitsenbarger?, Puffenbarger?) was a timber cutter and burner.
- <sup>47</sup> Faust, *Saltpetre Mining in Mammoth Cave, Ky.*, p73-74. Faust notes the proximity of Jack Mountain to seven niter caves, raising the possibility that this source supplied operations other than Trout Rock.
- <sup>48</sup> United States War Department, *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*, 70 vols. in 128 (Washington: Government Printing Office, 1881-1901), Ser. I, V33p228-29.
- <sup>49</sup> (Johnny Arvin Dahmer), "Sumwalt Gap Sign," *Pendleton Times*, June 5th, 1997, p5; O'Dell, "Bluegrass Powdermen," V103p111-12. O'Dell provides an excellent summary of the economics and mechanics of powder production.
- <sup>50</sup> Faust, *Saltpetre Mining Tools*, p10-13; *Caves, Caravans, and Cannons*, p14-15; Davies, *Caverns of West Virginia*, p175-76; Calhoun, *'Twixt North and South*, p111.
- <sup>51</sup> Faust, *Saltpetre Mining Tools*, p9; De Paepe, *Gunpowder from Mammoth Cave*, p11; Faust, *Saltpetre Caves*, p40 and 44; interview with G. Alexander Robertson, July 21st, 1968, Peter M. Hauer papers. The first chamber in New Trout is named the "Fagot Room." Davies, *Caverns of West Virginia*, p228. As recently as 1983 Trout Cave revealed a "bundle of fagots" made up of "two unburned fagots made from split wood and a binding consisting of two pieces of bark tied at the ends in square knots. The size of the binding indicated that the bundle once consisted of perhaps two dozen fagots. Presumably the bundle was brought into the cave and individual fagots used as needed." Fred Grady, "Recent Paleontological Work at the John Guilday Cave Preserve," *D.C. Speleograph*, September 1983, V39p9. According to Davies, "in Trout and Sinnit (sic) Caves, a thin soot-like deposit which covers the walls, floors, and ceilings was formerly thought to be soot resulting from saltpeter mining, but spectroscopic examination indicates that part of it is manganese dioxide." *Caverns of West Virginia*, p22-23. An analysis of the black dust in New Trout indicated that it is "ordinary soot." Fred Grady, "New Trout Survey Continued," *Potomac Caver*, January 1988, V31p5; Bob Glicker, "My First Survey Trip," *D.C. Speleograph*, February 1995, V50p8; "From the Archives," *D.C. Speleograph*, March 1990, V46p14.
- <sup>52</sup> Burton Faust, "The Formation of Saltpetre in Caves," *NSS Bulletin*, November 1949, V11p22.
- <sup>53</sup> Faust, *Saltpetre Mining Tools*, p10-11.
- <sup>54</sup> Davies, *Caverns of West Virginia*, p228 and 253; *D.C.*

- Speleograph*, December 1986 V40p1-2.
- <sup>55</sup> Faust, *Saltpetre Caves*, p40; a second site of piles of exhausted niter earth was "at the run crossing the road a half-mile north of Trout Rock...." Calhoun, *Twixt North and South*, p110-11.
- <sup>56</sup> Faust, *Saltpetre Caves*, p40; Faust, *Saltpetre Mining Tools*, p12 and 18. A photograph of a ladder once in Trout Cave appears on page 12. A photograph of the Trout Cave trough, which has long since disappeared, is found in Davies, *Caverns of West Virginia*, p254. *D.C. Speleograph*, September 1983, V39p9.
- <sup>57</sup> Ackie Loyd, "Trip Reports," *D.C. Speleograph*, January 1952, V6p4-5. Two other items found were "the crown of a felt hat, vintage unknown" and an "ancient leather shoe."
- <sup>58</sup> Fred Grady, "Unusual Tool from the Guilday Cave Preserve," *Potomac Caver*, July 1988, V31n6-7. Grady speculates that the hammer might have been lost in the confusion attending one of the Federal raids on the works during the Civil War.
- <sup>59</sup> Burton Faust, "New Saltpetre Cave Discovered Near Franklin, W. Va." *NSS News* (January 1952), V10p5.
- <sup>60</sup> Faust, *Saltpetre Caves*, 40.
- <sup>61</sup> Faust, *New Saltpetre Cave Discovered*, p5.
- <sup>62</sup> *Ibid.*
- <sup>63</sup> Acker Petit, "Found! A Lost Cavern," *Pittsburgh Press*, February 14th, 1954, p10, Faust Collection, Box 3, File 2.
- <sup>64</sup> Peter Hauer, "More Blasted Saltpetre Caves," *Speleo Digest*: 1967, p2-54.
- <sup>65</sup> Fred Grady, "New Trout Survey Continued," *Potomac Caver*, January 1988, V31p4-5; Fred Grady, "The John Guilday Cave Preserve Is 5 Years Old," *Potomac Caver*, June 1988) V31p7; Fred Grady, "Recent Trips to the Guilday Cave Preserve," *Potomac Caver*, June 1989, V32n3.
- <sup>66</sup> Burton Faust, "A Description of Sinnet Cave & Its Salt Petre Works," *NSS News* July 1956, V14p68-70; Faust, *Saltpetre Caves and Virginia History*, p40. The correct spelling is Sinnett, which is a family surname.
- <sup>67</sup> *Ibid.*; Davies, *Caverns of West Virginia*, p241-43. Davies is more conservative than Faust when describing the cave's dimensions. Faust places the entrance 100 feet above the level of Whitethorn Creek; Davies, 60 feet. Faust states that the Long Room is 125 feet above the lower passage; Davies, 90 feet. Faust gives the maximum height of the Long Room as 80 feet and its length as 870 feet; Davies, 40 feet and 800 feet respectively. As of July 1995, the Sinnett-Thorn Mountain Cave System had been surveyed to a total length of 1.86 miles and a depth of 386 feet. Bob Gulden, *USA Long Cave List*, July 10th, 1995.
- <sup>68</sup> *Ibid.*; Faust, *Saltpetre Caves and Virginia History*, p39-40.
- <sup>69</sup> Burton Faust, *Formation of Saltpetre in Caves*, p21-22.
- <sup>70</sup> Faust, *Saltpetre Mining Tools*, p11.
- <sup>71</sup> Faust, *Saltpetre Caves and Virginia History*, p40; *Newsletter of the National Speleological Society*, April 1946, V4p4; *D.C. Speleograph*, April 1951, V5n8; *NSS Newsletter*, May 1947, V5n1. "Notes on George Alexander Robertson Saltpetre Collection," Hauer papers.
- <sup>72</sup> Davies, *Caverns of West Virginia*, p243.
- <sup>73</sup> *Newsletter of the National Speleological Society*, April 1946, V4p4.
- <sup>74</sup> *NSS Newsletter*, December 20th, 1944, V2p2.
- <sup>75</sup> Faust, *Sinnit Cave & Its Salt Petre Works*, p69-70.
- <sup>76</sup> At the northern end of the gorge is an historical marker. "Smoke Hole, a rugged canyon made by the South Branch of the Potomac River, extends eighteen miles south to U.S. 220. Carved out of the strata of limestone are caves and rare formations, perfected through the ages. Big Cave, Blue Rocks, Chimney Rocks, Old Mines Cave, Indian House Cave, Eagle Rocks, Fishpot Rocks and the Smoke Hole Cave with its legend of the name "Smoke Hole" are the most noted." A slightly different marker at the southern entrance alludes to "Big Cave and Old Mines Cave, where saltpetre was made during the War Between the States,...." *West Virginia Highway Markers*, p153-54.
- <sup>77</sup> Davies, *Caverns of West Virginia*, p207-08. As of February 1997, the survey of Cave Mountain Cave reveals an aggregate passage length of 1.55 miles and a depth of 325 feet. Barry Chute and Bob Hoke, "The Pendleton County Speleological Survey," *Potomac Caver*, February 1997, V40p3.
- <sup>78</sup> *Ibid.*; Morton, *Pendleton County*, p94; H. M. Calhoun, "A Trip through Smoke Hole," *Pendleton Times*, October 15th, 1926, p1; Calhoun, *Tales of the Smoke Hole and Seneca*, p8 and 22; H. M. Calhoun, Sr., "Tales of Historic Smoke Hole and Seneca Rocks Interestingly Told," *The Herald* (Franklin, W. Va.), November 13th, 1930, p1, and November 20th, 1930, p1; H. M. Calhoun, Sr., "Caverns of Pendleton Are Described by H. M. Calhoun," *Herald*, November 19th, 1931, p2. Although Cave Mountain Cave #2 is listed as a saltpetre cave on the 1994 survey, it is considered a questionable entry, meaning that the recognized evidence that it was ever mined is meager. Plemons, *Saltpetre Cave Survey*, 1994, p39.
- <sup>80</sup> Davies, *Caverns of West Virginia*, p66-67; "Peacock's Cave," *Potomac Caver*, October 1984, V27p180; reprinted from *Grant County Press*, December 4th, 1908.
- <sup>81</sup> Tom Williams, "On the Workings of Petre," *Potomac Caver*, February 1970, V13n20.
- <sup>82</sup> David B. Reger and R. C. Tucker, *Mineral and Grant Counties* (West Virginia Geological Survey, 1924), p701-03; reprinted as "Saltpetre Mining (?) in Peacock Cave," *Journal of Spelean History*, (October-December 1992, V26p77-78. Reger characterized Peacock's operation as "small scale." Saltpetre historian Peter Hauer rated its size as "Medium+." Peter M. Hauer, *Saltpetre Cave Report Form: Peacock Cave*. The 1994 survey of niter caves labels Peacock Cave as a "Questionable Site." Plemons, *Saltpetre Cave Survey*, 1994, p38.
- <sup>83</sup> H. M. Calhoun, Sr., "Caverns of Pendleton Are Described by H. M. Calhoun," *Herald*, November 19th, 1931, p1.
- <sup>84</sup> Calhoun, *Tales of the Smoke Hole and Seneca*, p8; H. M. Calhoun, "The Truth about Smoke Hole," *Pendleton Times*, May 28th, 1926, p1; Calhoun, *Trip through Smoke Hole*, p1.
- <sup>85</sup> Neither Smoke Hole Cave or Old Mines Cave is found on the list of American niter caves. Plemons, *Saltpetre Cave Survey*, 1994, p39.
- <sup>86</sup> George Dasher, "Rockin' Chair," *The West Virginia Caver*, October 1994, V12n5p13. Assuming the distance cited is even approximately accurate, the paddle could not have come from Smoke Hole Cave. The cave's total length of known passage does not exceed 1200 feet, and no point would be more than a fraction of that distance from the entrance. Bob Hoke, "Smokehole Cave Survey," *Potomac Caver*, August 1987, V30p3-4.
- <sup>87</sup> Calhoun, *Tales of the Smoke Hole and Seneca*, p8.
- <sup>88</sup> Ansel, *Frontier Forts*, p111-12; Calhoun, *Caverns of Pendleton*, p2; Morton, *Pendleton County*, p94.
- <sup>89</sup> Davies, *Caverns of West Virginia*, p234-37; Tom Culverwell, "Mountaineering Under West Virginia," *Potomac Appalachian Trail Club Bulletin*, January 1941, p2-3.
- <sup>90</sup> Saltpetre Cave Report Form: Schoolhouse Cave. Hauer papers. Evidence of mining "includes large quantities of cave earth that satisfies the physical tests for the presence of saltpetre." Faust, *Saltpetre Caves and Virginia History*, p39.
- <sup>91</sup> Calhoun, *Caverns of Pendleton*, p2.
- <sup>92</sup> Saltpetre Cave Report Form: Schoolhouse Cave. Hauer papers. Mabel McDonald, Robert Weese, and B. Wright Harper, "Cave School of Seneca Rocks," *Pendleton Co. West Virginia Past and Present* (Waynesville, NC: Don Mills, Inc., 1991), p53.
- <sup>93</sup> Calhoun, *Caverns of Pendleton*, p2. In Repass Saltpetre Cave, ceiling dripwater collected in several troughs provided leachwater for a rather small niter operation, suggesting that the entrance spring at Schoolhouse Cave could have been used in a similar manner. Burton S. Faust, "Repass Saltpetre Cave, Bland County, Virginia," *D.C. Speleograph*, March 1960, V16p31-33.
- <sup>94</sup> Davies, *Caverns of West Virginia*, p208.
- <sup>95</sup> Saltpetre Cave Report Form: Cove Knob Cave. April 1969. Hauer papers.
- <sup>96</sup> *Ibid.* Hauer described this as a "small+++" operation. He also



- stated in April 1969 that the gypsum crystals were "still intact." A report and new map were made in April 1997. The map notes a trench, and two areas of "old saltpeter workings." The report refers to "the burned torches lying about, and the obvious trenching in various parts of the cave." With respect to the gypsum, the 1997 report continued that "it has the reputation of being a dry cave with gypsum flowers. We saw neither and, in fact, the cave was somewhat damp." George Dasher, "Cove Knob Cave," *The West Virginia Caver*, August 1997, V15n4p3. Despite the evidence given above, the cave is listed as a "questionable" niter mining site in Plemons, *Saltpeter Cave Survey*, 1994, p39.
- <sup>97</sup> *Caverns of West Virginia*, 216-18. Hauer describes the magnitude of this operation as "Small+++ to Medium+," but he does not cite any criteria in support of his judgment. Saltpetre Cave Report Form: Hoffman School Cave. Hauer papers. This site is listed as "questionable" in Plemons, *Saltpeter Cave Survey*, 1994, 39. The Pendleton County surname, and the name of the cave, is Huffman, not Hoffman.
- <sup>98</sup> Faust, "Saltpetre Caves and Virginia History," p37.
- <sup>99</sup> Davies, *Caverns of West Virginia*, p23-24.
- <sup>100</sup> Saltpetre Cave Report Form: Minor Rexrode Cave. Hauer papers.
- <sup>101</sup> (Johnny Arvin Dahmer), "Gun Powder Was Made in Pendleton County Many Years Ago," *Pendleton Times*, February 15th, 1996, p5; "Trout Rock Cave Furnished Much Gun Powder in Civil War," *Pendleton Times*, February 22nd, 1996, p5.
- <sup>102</sup> (Johnny Arvin Dahmer), "Gun Powder Was Made In Pendleton County Many Years Ago," *Pendleton Times*, February 15th, 1996, p5.
- <sup>103</sup> *Ibid.* Johnny Arvin Dahmer interview, Dahmer, WV, September 1st, 1997. The deed recording the sale of their Pendleton County land is dated 1835.
- <sup>104</sup> Davies, *Caverns of West Virginia*, p222.
- <sup>105</sup> Saltpetre Cave Report Form: Mill Run Cave; April 1970 map of Mill Run Cave prepared by York Grotto and drawn by Dale Ibberson; photocopy of page 28, undated (1970?), from the *York Grotto Newsletter*. Hauer papers.
- <sup>106</sup> (Peter M. Hauer), "Peter Run Cave, Pendleton County, W. Va.," photocopy of page 28, no date or vol., of *York Grotto Newsletter*. Hauer papers.
- <sup>107</sup> Fred Grady, personal communication, January 21st, 1997. Compared to the drill holes in New Trout, Grady remembered those in Walters Cave as smaller in diameter.
- <sup>108</sup> William M. E. Rachal, ed., "Early Records of the Virginia Historical Society, 1831-1833," *Virginia Magazine of History and Biography*, January 1959, V67p25-26. Dolbeare also describes karst features more distant from Pendleton's boundary than the Sinks of Gandy. He indicates his awareness of "a cave 30 miles south of Beverly that I have not had time to examine," and offers somewhat more information on Elk River, which "sinks under a mountain and runs about four miles, and emerges at the western base in a very large spring, on which is set a gristmill, there is no water in the natural bed of the river only in the time of high water."
- <sup>109</sup> *Ibid.*, p26.
- <sup>110</sup> Cecil D. Eby, Jr., "Porte Crayon": *The Life of David Hunter Strother* (Chapel Hill: University of North Carolina Press, 1960), vii-ix, p75-76, and 181-85. The evidence for Eby's guess that these travels occurred in 1854 is found on p63-67 and 181.
- <sup>111</sup> Eby, *Porte Crayon*, pages 182-83, 185-86, 190, 222.
- <sup>112</sup> David Hunter Strother, *Porte Crayon Sampler* (Richwood, W. Va.: Jim Comstock, 1974), p133-77, *passim*.
- <sup>113</sup> Douglas M. Medville and Hazel E. Medville, *Caves and Karst of Randolph County*, West Virginia Speleological Survey, Bulletin 13, June 1995, p148-49. A 1990 resurvey of Sinks of Gandy indicates a total passage length of 8114 feet or 1.54 miles.
- <sup>114</sup> *Ibid.*, p178-90.
- <sup>115</sup> *Ibid.*, p191.
- <sup>116</sup> *Ibid.*, p223-30.
- <sup>117</sup> *Ibid.*, p189 and 219; Medville, Douglas M., George R. Dasher, and Eberhard Werner, eds., *An Introduction to the Caves of East-Central West Virginia: Guidebook for the 1983 National Speleological Society Convention, Elkins, West Virginia* (West Virginia Speleological Survey, 1983) p85; Jack Preble, *Land of Canaan* (Parsons, W. Va.; McClain, 1960), p79-92.
- <sup>118</sup> George Dasher, "Mitchell Cave," *The West Virginia Caver*, June 1989, V7n3p3-7. The earliest inscription, judged to be of questionable authenticity, is "1800 GM." Dates accompanied by initials include "1808 JDS, MH 1844, WEM 1844, JC 1847, HC 1847, AJT 1860." Dates with an accompanying name are "Jay 1831; C. Bergall Oct 13, 1845; Jo B Trumbo L.B. Trumbo Aug 13, 1856; J.B. Trumbo May 6, 1860 Farewell" (Jacob Trumbo, Fort Seybert).
- <sup>119</sup> Peter M. Hauer, "A History of (Kenny) Simmons Cave," *Bulletin of the National Speleological Society*, April 1971, V33p87-89. The most probable names connected to this date are John Ham\_\_\_\_ (Hammer?) and William Simmons. Other possibilities are J.J. Ferguson, W.H. Mason, Peter Simmons, and Jacob Simmons. William Simmons and Peter Simmons were sons of Henry Simmons (1760-1825), who in 1812 built the brick home still standing on the bottomland across from the cave.
- <sup>120</sup> Peter Hauer, "Cave Inscription," *Journal of Spelean History*, January-March 1974), V7p16. Among the names are A.J. Rankin, Mag McCoy, J.D. Johnson, J.B. Johnson, Joe, Carrie Johnson, Maggie Johnson, and Ino D.J. Johnson.

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