

GUNPOWDER IN AMERICA  
1775-1800

by

Roy M. Boatman

July, 1955

During the colonial period of American history, the production of black gunpowder was almost nil. Only in times of dire emergencies were gunpowder mills projected or built. In the early years of the settlements in Virginia and Massachusetts, attempts were made to produce saltpeter, one of the three ingredients of black gunpowder, by the method of compost piles; i.e., the gathering of refuse containing nitrous matter which was allowed to decompose. During King Philip's War in New England, a powder mill was in operation on the Neponset River, near Milton, Massachusetts.<sup>1</sup> Of the gunpowder produced, it was said, "The powder is as good and strong as the best English powder."<sup>2</sup> The Neponset River mill apparently continued to manufacture powder until 1749, or 1757; the then owner, Benjamin Everenden, transferred his operations to a site near Canton, Massachusetts, and this mill continued to operate until his death in 1766.<sup>3</sup> Other attempts were made to build powder mills in the colonies, especially during the intermittent wars with France in the seventeenth and eighteenth centuries. Another and more popular method of obtaining gunpowder was to smuggle it into the colonies in defiance of the British Navigation Laws.<sup>4</sup>

At the start of the American Revolution, most, if not all, of the powder mills had been allowed to decay. It has been stated that not one mill was then in operation.<sup>5</sup> The supply of gunpowder for the patriots was extremely low, and the initial supply of it was obtained by seizures from provincial or royal magazines, both on the mainland and in the island colonies.<sup>6</sup> The Continental Congress and the Provincial Congresses passed numerous resolutions urging the production of saltpeter and gunpowder and offering bounties for the first lots of each.<sup>7</sup>

Each of the provinces had operating mills during the revolution, with the exceptions of Georgia and Delaware.<sup>8</sup> One powder mill, operated by Thomas Heinberger,<sup>9</sup> on "a Creek which emptys into French Creek" [Chester County, Pennsylvania] consisted of a stamping mill 36 feet by 30 feet, with a 16 foot over-shot water wheel and 18 stampers, and a drying house 18 feet by 20 feet.<sup>10</sup> Another and more extensive mill on French Creek was that of Cowperthwaite and Biddle: the stamping mill was 102 feet by 31 feet, 8 inches, with two 18 foot water wheels and 144 stampers; one saltpeter refining house with twelve 150 pound capacity kettles; four drying houses 27 feet by 21 feet, and one graining mill 37½ feet by 27½ feet, built of stone, with a 10½ feet water wheel and 12 sieves.<sup>11</sup> These mills were unusual in that they apparently employed the safety principle of plant dispersal, which was not widely accepted when E. I. du Pont began the manufacture of gunpowder in America.

Charcoal was locally produced. Sulphur had to be imported.<sup>12</sup> Saltpeter was either imported or refined by boiling the nitrous materials from compost piles, stable earth, or caves until the potassium nitrate recrystallized. Once purified and pulverized, the three ingredients of black gunpowder were incorporated in a stamping mill, sized (or grained) in a graining mill, polished in a rotating barrel mill, and then re-sieved.<sup>13</sup> E. I. du Pont's production method improved the refining and pulverizing processes, substituted the rolling wheel mill for the stamping mill, added a press mill to compress the powder when it came from the incorporating mill and before it went to the graining mill, developed graining machines, and glazed the powder with graphite as well as polishing it.

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The majority of the powder used by the American Revolutionary Army and Navy apparently came from Europe, sold or contributed by nations enemies to England.<sup>14</sup> Mercantile houses traded wherever they could to obtain powder.<sup>15</sup> At time, powder made by hand was used.<sup>16</sup> There were periods when the supply of gunpowder was so low that the American Army had to curtail operations for lack of it.<sup>17</sup>

By the 1790's it was claimed that Pennsylvania alone had twenty-one operating mills.<sup>18</sup> Massachusetts had mills in operations<sup>19</sup>, as did Maryland<sup>20</sup>, Kentucky<sup>21</sup>, and Connecticut.<sup>22</sup> Massachusetts exported in 1790-1791, 13,814 pounds of gunpowder.<sup>23</sup>

The Tariff Acts of 1789 and 1790 provided that sulphur could be imported free, saltpeter with a 5% ad valorem duty, and gunpowder with a 10% ad valorem duty.<sup>24</sup> It was further provided that duties would be refunded if the imported articles should be exported within twelve months, "except one per centum on the amount of the said duties."<sup>25</sup>

150,260 pounds of gunpowder were exported from the United States in the period, 1791-1800,<sup>26</sup> but the percentage of domestic production included cannot be ascertained as no figures for importations during this period were discovered.

The use of gunpowder for blasting rock ledges in preparation for turnpike construction is not clear prior to 1800, but it is believed that it was used.<sup>27</sup> In the clearing of streams of navigation obstacles it is also believed that it was used that early.<sup>28</sup>

Definite use was made of it in the construction of canals. The blasters on the Middlesex Canal (between Boston and the Merrimac River) in Massachusetts found that neither domestic nor foreign powder answered their purpose, but that the latter was better than the former.<sup>29</sup> Under the direction of James Rumsey, one of the pioneers of steam navigation, gunpowder was used on the construction of the Potomac Canal in Virginia and Maryland during 1785-1786 to blast channels through solid rock and prepare canal locks at the Great Falls, Shenandoah Falls, and Seneca Falls on the Potomac River.<sup>30</sup> It was found that ordinary gunpowder did not serve as well for blasting as did cannon powder.<sup>31</sup> Apparently gunpowder specifically for blasting was not at that time manufactured.

Gunpowder was not used in the excavating of an American tunnel until 1818.<sup>32</sup>

The first use of gunpowder in mining is supposed to have taken place around the year 1600.<sup>33</sup> It is not at all clear, but there is a possibility that gunpowder for blasting may have been used prior to 1800 in the mining of American coal, at least in the sinking of shafts.<sup>34</sup> In the mining of iron ore, gunpowder was definitely used in New Jersey and Pennsylvania.<sup>35</sup>

Nothing has been discovered to indicate whether or not it was used in quarrying operations.

Due to the dependent nature of the American Indian culture, gunpowder was of vital necessity to them. No records, however, have been discovered of the extent of powder traded to the Indians prior to 1800. The

retention of the Northwest posts by the British until 1796 restricted the activities of the American traders. In 1795 the U. S. Congress established the Government Factory System to deal with the Indians. Gunpowder was one of the articles traded by the government factors to the Indians,<sup>36</sup> as well as muskets, lead, strouds, etc.

No statistics have been discovered to indicate how much powder was used in frontier hunting and warfare. It would be safe to assume that a considerable amount was used for both purposes. Of gunpowder at General Arthur St. Clair's defeat at the hands of the Ohio confederated tribes in 1791 it has been written

Short on fodder for man and beast,  
Our powder poor or missing,  
We were cold and sick when our firing ceased,  
Sicker still when their bullets creased  
The air with a hornet's hissing.<sup>37</sup>

During the last quarter of the eighteenth century, the production of black gunpowder in America was small, widely scattered, and usually of short duration. In regard to the employment of gunpowder for commercial purposes, this quarter century might be characterized as a latent period, during which forces and mental attitudes were developing which helped to lead to the outburst of mining, transportation, and construction during the nineteenth century. Black gunpowder was to play an extremely important role in that century; except for warfare and the hunt, it was of relatively small importance during the eighteenth century.

## FOOTNOTES

1. Arthur P. Van Gelder and Hugo Schlatter, History of the Explosives Industry In America. New York, 1927, 32-35; see also Charles C. Smith, "The Manufacture of Gunpowder in America," Massachusetts Historical Society Proceedings, XIV (1875-1876), 250: "We are upon a worke of makeing powder and have erected a mill in order there unto at Neponset, about 6 miles from Boston; our difficulty will be for peter, which we must, in our beginning, have from without us, but hope, in time, may raise it amongst us." (1674)
2. Van Gelder, 35.
3. Ibid., 35-36.
4. William S. McClellan, Smuggling At The Outbreak Of The Revolution With Special Reference To The West Indies Trade. New York, 1912, 60.
5. Van Gelder, 60.
6. Allen French, The Day of Concord and Lexington. The Nineteenth of April, 1775. Boston, 1925, 25-26; for the naval expedition against New Providence in the Bahama Group, see Gardner W. Allen, A Naval History of the American Revolution. Boston and New York, 1913, I, 95-96.
7. Worthington C. Ford, editor, Journals of the Continental Congress, 1774-1789. 34 vols. Washington, 1904-1937: II, 85-86, 218-219; III, 296, 349; IV, 170-171; Peter Force, editor, American Archives, 4th series, 6 vols., Washington, 1837-1844: V, 380-391, 1242, 1265.
8. Van Gelder, 40-66.
9. given as Thomas Heimberger in ibid., 65.
10. J. Smith Futhey and Gilbert Cope, History of Chester County, Pennsylvania. Philadelphia, 1881, 64.
11. Ibid.
12. William Haynes, The Stone That Burns. New York, 1942, 72.
13. Henry Wisner to B. Towne, December 21, 1775, in Force, American Archives, 4th series, IV, 366-367.
14. James B. Perkins, France In The American Revolution. Boston and New York, 1911, 86-87, 92-93, 95, 99-100, 105, 107; Orlando W. Stephenson, "The Supply of Gunpowder in 1776," The American Historical Review, XXX, No. 2 (January, 1925), 277; Allen French, The First Year Of The American Revolution. Boston and New York, 1934, 489, 654, 699, 702; William G. Sumner, The Financier And The Finances of The American Revolution. New York, 1892, I, 125.

15. Kenneth W. Porter, The Jacksons and the Lees. Two Generations of Massachusetts Merchants 1765-1844. Cambridge, 1937, I, 316-318, 328; James B. Hedges, The Browns of Providence Plantations. Colonial Years. Cambridge, 1952, 225-226; Arthur M. Schlesinger, The Colonial Merchants And the American Revolution, 1763-1776. New York, 1918, 567-568.

16. Van Gelder, 41; Cliver Jensen, "The Peales," American Heritage, VI, No. 3 (April, 1955), 98.

17. Allen Bowman, The Morale of the American Revolutionary Army. Washington, 1943, 17; Van Gelder, 40.

18. Arthur H. Cole, editor, Industrial and Commercial Correspondence of Alexander Hamilton Anticipating His Report on Manufactures. Chicago, 1928, 120; Tench Coxe, A View of the United States of America. Philadelphia, 1794, 148.

19. William Winterbotham, An Historical, Geographical, Commercial, and Philosophical View of the United States of America. New York, 1796, II, 167.

20. Van Gelder, 69

21. Victor S. Clark, History of Manufactures in the United States. New York, 1949, I, 1607-1860, 341; Mary Verhoeff, The Kentucky River Navigation. Louisville, 1917, 134, footnote.

22. Winterbotham, II, 271.

23. Ibid., 163. The percentage of domestic powder in this figure cannot be ascertained.

24. Robert G. Proctor, compiler, Tariff Acts Passed By The Congress Of The United States From 1789 to 1897. Washington, 1898, 10-11, 13.

25. Ibid., 11, 13.

26. Timothy Pitkin, A Statistical View of the Commerce of the United States of America. New York, 1817, 63-64.

27. Frederic J. Wood, The Turnpikes of New England. Boston, 1919, 37-38.

28. A Treatise On Internal Navigation. Explaining The Principles By Which Canals and Their Appendages Are Laid Out, Constructed and Kept In Repair. Ballston Spa, 1817, 77-78, 79. Report of B. H. Latrobe to Albert Gallatin, March 16, 1808: "The least expensive and most obvious means of removing the former are the blowing the most prominent rocks so as to straiten the channel, and procure a passage at low water."

29. Christopher Roberts, The Middlesex Canal, 1793-1860. Cambridge, 1938, 65-66, 89. "High-powered explosives were unknown; and black gunpowder, often defective, both domestic and foreign, was alone used for reducing stones to manageable dimensions. The foreign article was usually the more reliable."

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31. Turner, 37. "The powder that is sent doath not answer our purpose near as well as Coarse Cannon powder, therefore Should be glad if we could have it brought from Baltimore if there is none in town."

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33. Ibid., 16.

34. A. T. Shurick, The Coal Industry. Boston, 1924, 49; Thomas A. Rickard, Man and Metals. A History of Mining in Relation to the Development of Civilization. New York and London, 1932, II, 805.

35. Samuel Gustaf Hermelin, Report About The Mines In The United States of America, 1783. Translated from the Swedish with Introduction and Notes by Amandus Johnson. Philadelphia, 1931, 26; Johann David Schoepf, Travels in the Confederation. Translated and edited by Alfred J. Morrison. Philadelphia, I, 197-198; Arthur C. Bining, Pennsylvania Iron Manufacture in the Eighteenth Century. Harrisburg, 1938, 70.

36. Edgar B. Wesley, "The Government Factory System Among the Indians, 1795-1822," Journal of Economic and Business History, IV, No. 3 (May, 1932), 498; George D. Harmon, Sixty Years of Indian Affairs. Political, Economic, and Diplomatic 1789-1850. Chapel Hill, 1941, 111.

37. stanza from "Retreat Along The Wabash" in Martha Keller, Brady's Bend and Other Ballads. New Brunswick, 1946, 13.