

# THE WESTERN PENNSYLVANIA HISTORICAL MAGAZINE

---

VOLUME 45

JUNE 1962

NUMBER 2

---

## SMOKE, SMOG, AND HEALTH IN EARLY PITTSBURGH

JOHN DUFFY

WITH the great killer diseases of the past virtually eliminated or under control, medical and public health leaders in the twentieth century have turned increasingly to the study of chronic diseases and other health hazards formerly considered a normal part of life. Although medical and public health authorities differ widely as to the nature and extent of the potential health hazard, there is a great deal of concern over the problem of air pollution. Conscious as we are of this problem, it is a little surprising to the student of early Pittsburgh history to find that the travellers and chroniclers of Pittsburgh invariably described it as having an abounding health and an incredible amount of smoke. The juxtaposition of these seemingly inconsistent attributes may well be justified.

In the late eighteenth century Pittsburgh was considered one of the many healthful spots west of the mountains where the refugee from the crowded Eastern cities could, by virtue of the bracing air and pure water, repair his broken health. The editor of the *Pittsburgh Gazette* in 1786, in noting that the town had "two gentlemen of the medical faculty," declared that even "though health may be accounted

---

Dr. Duffy, formerly a member of the History Department at Louisiana State University, is presently a member of the faculty at the University of Pittsburgh where he is Associate Professor of the History of Public Health in the Graduate School of Public Health. He is also Associate Professor of History in the History Department. Dr. Duffy has published many articles and books, notably *Epidemics in the American Colonies* and *The Rudolph Matas History of Medicine in Louisiana* in two volumes. — Ed.

a birth-right of this place, nevertheless, we account these gentlemen a great acquisition." Thus, he added, "if individuals, or families, at any time should think it advisable to cross the mountains and spend a few months at Pittsburgh, for the sake of health, they will find it in their power to receive the best advice the science can afford, and the most judicious treatment."<sup>1</sup>

Before the advent of the pall of smoke with which the city was to be characterized in the nineteenth century, an observer in 1786 mentioned that early on summer mornings a light fog hovered over the valley. The nature of this fog was salutary, he wrote, since it arose not from stagnant water but rather had been extracted by the sun from the trees and flowers the previous day and returned at night in the form of dew. Its aromatic quality, he concluded, made it decidedly healthful.<sup>2</sup>

The beauty of Pittsburgh's location at the juncture of the Allegheny and Monongahela Rivers was the first observation of all who saw it in its pristine days, when the few buildings clustered on the Point served only to emphasize the advantages which nature had bestowed upon this site. An Englishman, who visited the town in 1806, declared: "No inland town in the United States, or perhaps in the world, can boast of a position superior to this, both as to its beauty, and also the many advantages with which it is attended."<sup>3</sup> An American traveler a year or so later described it as "charmingly situated upon a point of land."<sup>4</sup>

Precisely at what date Pittsburgh made the transition from a relatively small trading center to a thriving little industrial town is difficult to say, but the abundant supplies of coal were put to use almost from the time of settlement. One of the earliest references to Pittsburgh mentions that at the time when the town was destroyed during Pontiac's Conspiracy there was at least one coal mine.<sup>5</sup> In 1788-89 Colonel John May of Boston visited Pittsburgh and noted that it "abounds with good sea-coal, which they call here

1 *Pittsburgh Gazette*, August 26, 1780 [1786], quoted in *The Register of Pennsylvania*, VII (1831), 348.

2 *Pittsburgh Gazette*, July 26 [29?], 1786, quoted in *ibid.*, IV (1829), 279.

3 Thomas Ashe, *Travels in America, Performed in 1806 . . .*, 3 vols. (London, 1808), I, 38-39.

4 Christian Schultz, Jun., Esq., *Travels on an Inland Voyage through the States of New-York, Pennsylvania, Virginia, Ohio, Kentucky and Tennessee . . . Performed in the Years 1807 and 1808 . . .*, 2 vols. (New York, 1810), I, 124.

5 "Journal of William Trent," in Glenn B. Hawkins, *A Critical Study of Pittsburgh as seen by Travelers before 1808*, M.A. Thesis, University of Pittsburgh, 1924, 14.

stone coal.”<sup>6</sup> Six or seven years later Victor Collot described an open mine on one of the hills surrounding Pittsburgh. The coal, he said, was so cheap and excellent a fuel “that although the inhabitants live in the midst of forests they prefer it to their best wood.” He commented that little effort had been made to establish manufacturing, but that once the Indian frontier had been thrown back and the roads improved, Pittsburgh would “certainly become one of the first inland cities of the United States.”<sup>7</sup> In 1796 Francis Bailey observed that there were great quantities of iron close to Pittsburgh, and as to coal, he declared, “it abounds all over the western country, and lies so near the surface of the ground, that the waggon [*sic*] wheels often cut into it on the roads.”<sup>8</sup>

The name of the first traveler to take note of the pall of smoke overhanging the town will never be known, but probably the first one to comment upon it was John Bernard, who visited Pittsburgh around 1800. “On approaching Pittsburgh,” he wrote, “we were struck with a peculiarity nowhere else to be observed in the States: a cloud of smoke hung over it in an exceedingly clear sky, recalling to me many choking recollections of London.”<sup>9</sup> As the town grew, it was inevitable that the crown of smoke would grow, too. In 1807 Christian Schultz stopped briefly in Pittsburgh and wrote that he found it abundantly supplied with “inexhaustable mines” from which coal could be delivered to houses at six cents for an eighty-pound bushel. Although he praised its location, he added: “The first entry into Pittsburgh is not equally agreeable to every person, as the sulphureous vapour arising from the burning of coal is immediately perceptible; a few days residence will, however, in a great measure accustom you to this inconvenience.” Schultz, like many observers who visited Pittsburgh in its early days, was quite impressed with its prosperity and prospects for future growth. Indeed, he wrote, it “may justly be considered as the metropolis of the western country.”<sup>10</sup>

6 *Journal and Letters of Colonel John May, of Boston relative to Two Journeys to the Ohio Country in 1788 and '89, with a Biographical Sketch by Reverend Richard S. Edes and Illustrative Notes by William M. Darlington* (Cincinnati, 1873), 51.

7 Victor Collot, *A Journey in North America . . .* (Paris, 1826), in *Reprints of Rare Americana*, no. 4, 38-39.

8 Francis Baily, *Journal of a Tour in Unsettled Parts of North America in 1796 & 1797* (London, 1856), 147.

9 John Bernard, *Retrospection of America 1797-1811*, Mrs. Bayle Bernard, ed. (New York, 1887), 182.

10 Schultz, *Travels on an Inland Voyage*, I, 126.

By 1810 the utilization of coal had grown to such an extent that the city had assumed a permanent mantle of smoke, one which was to characterize it for almost the next century and a half. In the ensuing years the first impressions recorded by all visitors were of a town virtually hidden by smoke. When Fortescue Cuming described Pittsburgh around 1810 the rain of coal dust and particles of carbon upon the buildings had already discolored them to such an extent that the whole town had a dingy and depressing appearance. He observed that coal was so cheap that there were "few houses, even amongst the poorest of the inhabitants, where at least two fires are not used — one for cooking, and another for the family to sit at." "This great consumption of a coal abounding in sulphur, and its smoke condensing into a vast quantity of lampblack," he added, "gives the outside of the houses a dirty and disagreeable appearance — even more so than in the most populous towns of Great Britain . . ." <sup>11</sup>

While travelers in the eighteenth century were impressed with the beauty of Pittsburgh's location, those in the early nineteenth were far more impressed with the tremendous resources, bustling activity, and thriving commerce. William Darby, who spent some time surveying the city in October of 1815, wrote that it was literally a workshop, although by no means a pleasant place in which to live. By a conservative estimate, no less than two thousand bushels of coal were burned daily within the space of two and a quarter miles, he said, with the result that the "constant volumes of smoke preserve the atmosphere in a continued cloud of coal dust." <sup>12</sup>

In 1815 when all descriptions of the town agreed with respect to the omnipresent pall of smoke, Pittsburgh was still relatively small, although the estimates of its population vary widely. John Melish, who published his *Travels* in 1812, asserted that the population of Pittsburgh jumped from 2,400 in 1800 to 4,768 in 1810. *The Pittsburgh Directory, for 1815* gives virtually identical figures for these years and then estimates the population in 1815 at "upwards of 9,000." However, George Thurston, in his brief account of Pittsburgh in the mid-nineteenth century, listed the population at 5,748 in 1813 and at 7,000 in 1817.<sup>13</sup> Since the editor of the directory

11 Fortescue Cuming, *Sketches of a Tour to the Western Country* . . . (Pittsburgh, 1810), 62.

12 William Darby, *The Emigrant's Guide to the Western and Southwestern States and Territories*: . . . (New York, 1818), 258-59.

13 John Melish, *Travels in the United States of America in the years 1806 & 1807, and 1809, 1810, & 1811* . . . , 2 vols. (Philadelphia, 1812), II,

was undoubtedly indulging in the traditional American practice of "boosting," it is safe to assume that the population in 1815 was closer to 6,000 or 7,000.

Whatever may have been the exact figures, Pittsburgh was a booming town and the number of chimneys belching forth their fumes was growing rapidly. David Thomas, who visited Pittsburgh in 1816 and called it the Birmingham of America, presented a rather grim picture of its appearance. "Dark dense smoke was rising from many parts," he wrote of his first impression, "and a hovering cloud of this vapour, obscuring the prospect, rendered it singularly gloomy. Indeed, it reminded me of the smoking logs of a new field." In speaking of fruit trees, he noted that they bloomed well despite severe frosts, a fact which he attributed to the smoky atmosphere. He added, however, that among the disadvantages of the smoke was the fact that "it tarnishes every object to which it has access."<sup>14</sup>

Two years later, Evans Estwick, another traveler who predicted a great industrial future for Pittsburgh, commented that the smoke was so great that even "the complexion of the people [was] affected by this cause."<sup>15</sup> The following year, 1819, Henry Heald described his first impression of the town as "rather disagreeable." "A dark cloud of coal dust hovering over it, the blackness of the buildings, and on a near approach, the smell of the stone coal," he wrote, "made our entrance very unpleasant." The theme which so many travelers reiterated of Pittsburgh being literally a workshop was also commented upon by Heald, who remarked that every "house has the appearance of being the seat of industry." "Indeed," he continued, "I saw but one house that appeared to be the residence of inactive wealth, and but one vehicle of pleasure."<sup>16</sup>

Even the editors of *The Pittsburgh Directory, for 1819* felt impelled to apologize for the town's general appearance, explaining that the traveler "who has formed an idea of its beauty from the accounts he has heard of its wealth and importance, is not a little disappointed when he enters it." "Every object," they wrote, "wears

54-55; *The Pittsburgh Directory, for 1815* . . . . (Pittsburgh, 1815), 2; George H. Thurston, *Pittsburgh As It Is* . . . . (Pittsburgh, 1857), 39.

14 David Thomas, *Travels Through the Western Country in the Summer of 1816* . . . . (Auburn, N. Y., 1819), 50, 59.

15 Evans Estwick, *A Pedestrious Tour of Four Thousand Miles through the Western States and Territories during the Winter and Spring of 1818* (Concord, N. H., 1819), 145.

16 Henry Heald, *A Western Tour in a Series of Letters* (Wilmington, Del., 1819), 11.

a black and sombre appearance.”<sup>17</sup> By the time Mrs. Anne Royall visited Pittsburgh about ten years later, the population had grown to approximately 13,000 and the accumulated grime had encrusted the outside and permeated the inside of every building in town. There was “more smoke than I could have conceived,” Mrs. Royall wrote. Not only were the buildings all “colored quite black with the smoke,” but “the interior of the houses are still worse; carpets, chairs, walls, furniture — all black with smoke: no such thing as wearing white: the ladies mostly dress in black; and a cap or white ruff, put on clean in the morning, is tinged quite black by bed-time: the ladies are continually washing their faces.” In addition to giving everything “a very gloomy doleful appearance,” she said, the smoke “is quite annoying to the eyes of strangers.”<sup>18</sup>

One can find dozens of descriptions comparable to the foregoing ones as Pittsburgh steadily developed its industrial potential, and it is scarcely necessary to establish the fact that the city was henceforth shrouded in a cloud of smoke for the remaining years of the nineteenth century. Pittsburgh quite obviously achieved for itself the dubious distinction of being the first major city in America to create an air pollution problem. The surrounding hills, as one of the early observers noted, prevented the smoke from escaping and returned it “upon the town.”<sup>19</sup> The significant point is not so much the presence of smoke, a fact well established, but rather the impact of this omnipresent dust and grime upon the health of those residents who spent all, or at least a good part of their lives, in this presumably unwholesome atmosphere. The answer to this question is not readily at hand, nor can it ever be ascertained with any great degree of certainty. Once the medical or public health historian leaves the twentieth century, he is immediately confronted with the fact that vital statistics, in many cases, are simply non-existent and in virtually all cases are of doubtful reliability. This is not to say that the reverse necessarily holds true for the present century, but in terms of quantity and quality a drastic change has taken place in the past fifty years. Accepting the limitations on early statistical evidence, the student is forced to rely to a considerable

17 J. M. Riddle and M. M. Murray, *The Pittsburgh Directory for 1819 . . . .* (Pittsburgh, 1819), 13.

18 Anne Royall, *Mrs. Royall's Pennsylvania or Travels Continued in the United States*, 2 vols. (Washington, 1829), II, 54-55.

19 William Tell Harris, *Remarks made during a Tour through the United States of America, in the years 1817, 1818, and 1819 . . . .* (London, 1821), 89-90.

degree upon the accounts of visitors and of the townspeople themselves.

Unfortunately, commendable as local pride is, it is scarcely conducive to objectivity, and there are few areas in the world where the residents are willing to concede that their locale is unhealthy. While most sections may take perverse pride in the fact that their climate is colder or warmer, wetter or dryer, or even more changeable than any other area, when pressed, the residents will usually admit that the total effect is beneficial to health. For example, during the nineteenth century when New Orleans was almost universally considered to be a hotbed of disease and pestilence and when all evidence indicates that this literally was the case, its citizens stoutly maintained that the city was a veritable Garden of Eden. They not only refused to acknowledge any degree of insalubrity, but argued that the opposite was true.<sup>20</sup> Under these circumstances, it is logical to expect to find the early residents of Pittsburgh extolling the merits of their climate, their town, and their good health. Unlike New Orleans, however, where few outsiders were inclined to accept the local viewpoint, visitors to Pittsburgh were almost as enthusiastic about health conditions as the native residents.

Francois André Michaux declared at the beginning of the nineteenth century that the air was very salubrious in and around Pittsburgh and that intermittent fevers were unknown. Although he did not connect the two, apropos of the absence of intermittent fevers he commented that the residents were not "tormented in the summer with mosquitoes [*sic*]." Michaux's remarks were confirmed in 1807 by Zadok Cramer, who published the *Pittsburgh Almanack* for 1807. Cramer wrote of the "ague" that "the inhabitants of this place are not plagued with this ugly complaint, but strangers passing through the town sometimes are affected with it."<sup>21</sup>

The one disorder that struck many visitors as being unique was goitre. A traveller in 1803 wrote: "We observed several people near Pittsburgh affected with a tumor on the throat like a wen. Inquiring into the cause of it, we were informed that they imputed it to some effect of the climate under the brows of the high mountains . . ." He added that even dogs and some other animals were affected

20 John Duffy, ed., *The Rudolph Matas History of Medicine in Louisiana*, 2 vols. (Baton Rouge, La., 1958-1962), I, chapters 10, 16; II, chapters 5, 16.

21 Francois André Michaux, *Travels to the West of the Allegheny Mountains . . . September 24, 1801-March 1, 1803*, in Reuben Gold Thwaites, *Early Western Travels* (Cleveland, 1904), III, 157; Zadok Cramer, *Cramer's Pittsburgh Almanack for the Year of Our Lord, 1807* (Pittsburgh, 1807), 25.

by the disease.<sup>22</sup> Medical advertisements in Pittsburgh newspapers also indicate the presence of goitre in the early years. For example, the following notice appeared in *The Commonwealth* on January 27, 1808:

A Medical Gentleman, Unexpectedly detained in Pittsburgh . . . [and] . . . having observed how generally the inhabitants are afflicted with the GOITRE, or swelled throat, has made it his business to enquire into the nature of that disease, and . . . has discovered a most certain and safe remedy for it, which in the course of a few days will be offered for sale . . .

In 1824 a French physician on his way to New Orleans announced in the *Pittsburgh Gazette* that he had a medicine which has been used with success in France "for the cure of the Bronchocele, or Goitre (swelled neck)." <sup>23</sup> Yet two years later Dr. William H. Denny, writing in the Pittsburgh city directory, asserted the "goitre, or swelled neck has disappeared; the few cases which formerly excited the apprehensions of the stranger, no longer exist to gratify his curiosity." <sup>24</sup> Whether or not goitre had completely disappeared is debatable, but it is significant that no further references to the disorder appear. It may be that as the city grew in size a more varied diet was made available, thus eliminating the iodine deficiency.

Dr. Denny in this same article presented a glowing description of the city's health, and his enthusiastic account may well explain why successive Pittsburghers have quoted him possibly more than any other single source on Pittsburgh's early medical history. Speaking in general of malaria, he wrote that of "all the great western towns, Pittsburgh is the farthest removed from the baneful exhalations of the swampy margin of the Mississippi and accordingly enjoys a great exemption from those diseases, which during the summer and autumn prevail even as high up as Cincinnati." Furthermore, he declared the smoke of bituminous coal was "anti-miasmatic," and, because of its "sulphureous and antiseptic" qualities, "no putrid disease has ever been known to spread in the place."

The disorders in the Pittsburgh area, he wrote, were similar to those found in "the healthiest situations of the same latitude elsewhere in America — in winter, pneumonia and sore throat, and in

22 Thaddeus Mason Harris, *The Journal of a Tour into the Territory Northwest of the Allegheny Mountains*; . . . 1803 . . . in *ibid.*, 346.

23 *Pittsburgh Gazette, And Manufacturing & Mercantile Advertiser*, October 15, 1824.

24 S. Jones, *Pittsburgh in the Year Eighteen Hundred and Twenty-Six, Containing Sketches Topographical, Historical and Statistical* . . . (Pittsburgh, 1826), 31-32.



summer, bilious affections." The town had "scarcely any ague and fever, and no yellow fever," and in comparison with the western cities, it had "less bilious fevers, less ague and fever, and less cholera infantum, or the summer complaint of children." "In comparison with the eastern cities," he continued, "there is much less pulmonary consumption; less scrofula, and less disease of the skin." Pittsburgh, he asserted, was the "intermediate link of disease, as well as of commerce," with "less hepatic disease than the west, and less pulmonic disease than the east."<sup>25</sup>

Reflecting the general recognition of the intimate connection between malaria and stagnant water, he noted: "Our exemption from the ague, and epidemic dysenteries, in comparison with the settlements in the lower counties, and eastern vallies, may be accounted for also, in part, by the scarcity of mill-dams and stagnant water." He conceded that dyspepsia and "chronic affections of the liver" were becoming more common and that "the diseases of intemperance" were increasing. "Our great manufacturing establishments may be expected, in the course of time," he continued, "to add to the bills of infirmity; but, probably, never to the extent that similar pursuits have produced in Europe." His explanation for this prediction has a surprisingly modern ring:

Our youth are not so early introduced into factories; the confinement is not so great; the food is more nutritious [sic]; but few dwell in cellars to work in crowded apartments, and none labour under the continual apprehension of being, by the fluctuations of trade, thrown out of employment, and wanting bread.

With considerable pride, he concluded that no part of the United States was healthier or more salubrious than Pittsburgh and Western Pennsylvania.<sup>26</sup>

Apropos Dr. Denny's remarks on malaria, in 1833 a Pittsburgh physician wrote to *The Daily Pittsburgh Gazette*, which had just quoted Dr. Denny on the subject, pointing out that the latter must have been aware that several cases of ague had occurred in Pittsburgh in 1823 and that six or seven cases had developed on the west side of the Allegheny. Furthermore, he wrote, several cases had occurred across the river almost every year, although, he added, "as the population increases, and improvements are made, the ague is disappearing, in Allegheny town."<sup>27</sup> Rather than discredit Dr. Denny,

<sup>25</sup> *Ibid.*, 31-32.

<sup>26</sup> *Ibid.*, 32.

<sup>27</sup> *The Daily Pittsburgh Gazette*, August 8, 1833.

the newspaper letter serves to confirm Pittsburgh's relative freedom from malaria. It is obvious from the correspondent's remarks that the appearance of ague in 1823 was unusual and that despite the appearance of a few cases across the river, the disease had not affected a permanent lodging in the city itself.

A brief notice in *The Register of Pennsylvania* early in 1828 corroborates the felicitous picture of Pittsburgh drawn by Dr. Denny and his contemporaries. Under the heading, "The West End of Pennsylvania," the journal stated: "There are no malaria — no intermittent, or any other diseases, incident to a bad climate. All is healthy. The population stout and active . . ." <sup>28</sup> Later in this same year, the author of an article on the topography and diseases of Western Pennsylvania agreed that the area was free from "marsh miasmata" and intermittent fever, but asserted that diseases of the chest and lungs were "increasing among the sedentary population of our towns with fearful strides." <sup>29</sup> The rise of tuberculosis in the nineteenth century was a phenomenon closely associated with the emerging urban civilization and one from which the towns in Western Pennsylvania could scarcely be exempted. Unfortunately the author did not provide any statistics or make any relative comparisons.

The felicitous picture generally presented of health conditions in early Pittsburgh may be explained in part by the excellence of the town's water supply. In a time when the absence of sewage systems and the reliance upon shallow water wells almost inevitably led to contaminated water supplies in most urban areas, Pittsburgh was fortunate enough to avoid this difficulty, for the rapidly flowing Allegheny and Monongahela Rivers provided the town's inhabitants with an abundance of relatively safe potable water. Although wells were occasionally used, in general the residents tended to draw their water from this source. In 1803 Thaddeus Mason Harris was surprised to find the townspeople "use the water of the river here and down the Ohio for drink and cookery, even in preference to the spring water from the hills." He was assured by the settlers that "the river water was more wholesome and generally much more

---

28 "The West End of Pennsylvania," *The Register of Pennsylvania* (1828), II, 21-22.

29 "Topography and Diseases of Western Pennsylvania," by L. Callaghan, extract from *American Medical Journal*, in *The Register of Pennsylvania* (1828), II, 265-267.

palatable" than the latter, and he explained that "the spring water, issuing through fissures in the hills, which are only masses of coal, is so impregnated with bituminous and sulphureous particles as to be frequently nauseous to the taste and prejudicial to the health." <sup>30</sup>

At the time Harris was writing, however, the citizens of Pittsburgh were already engaged in drilling four deep wells to provide a public water supply. On August 9, 1802, an ordinance was passed to this effect, and four days later the town clerk advertised for bids "for digging and walling with hard brick or stone, three or perhaps four Wells, in Market Street, to be not less than 47 feet deep, and completed in the course of the present season." Bids were also invited for the construction of pumps over the wells. In December the burgesses reported that two wells had been completed and a contract let for still another. They added that they had been authorized to assign certain private wells for public use, but they assured the citizens that "if individuals at their own expence [*sic*] [had] sunk wells and erected pumps in the streets in useful and necessary parts of the borough," they would be compensated by the municipal authorities.<sup>31</sup>

It is probably a safe assumption that those persons living near the river continued to use river water, although the new wells undoubtedly provided much of the city water. Whatever the case, the water supply seems to have been relatively safe, since there is no evidence of any increase in the enteridities or other water-borne diseases. As the town's population grew by leaps and bounds, it was soon evident that the city wells could not provide an adequate supply of water. A group of prominent citizens then swung into action, and in February of 1824 an ordinance was passed authorizing the raising of money for the erection of a water works. In commenting upon the measure, the *Pittsburgh Gazette* stated that conveying water by pipes to all people living in Pittsburgh "would enhance the value of property . . . as well as, by furnishing the means of cleanliness, promote the health and add to the comfort and convenience of the inhabitants . . ." <sup>32</sup>

Little further was accomplished until two years later when the mayor was authorized to negotiate a loan of \$40,000. With these

30 Harris, *The Journal of a Tour*, in Reuben Gold Thwaites, *Early Western Travels* (Cleveland, 1904), III, 345-346.

31 *Pittsburgh Gazette*, August 13, 1802.

32 *Pittsburgh Gazette, And Manufacturing & Mercantile Advertiser*, February 20, 1824.

funds in June of 1826 sites for a reservoir on Grant's Hill and a pumping station at the foot of Cecil Alley were purchased, and by September of 1828 the water system was reported to be ready for service.<sup>33</sup> In December the local newspapers were carrying notices from the City Water Works that "applications for supplying Water to those persons who may wish it" were being received. A month or so later the city authorities reported that almost \$37,600 had been spent on the water system. Subsequently an ordinance was passed establishing "a water committee" vested with complete authority to handle all matters relating to the water works, and providing for stringent measures to be taken against anyone found defacing or destroying the water works equipment.<sup>34</sup>

In the succeeding months the water works was steadily expanded. For example, in August of 1829 the *Statesman*, one of the local newspapers, reported that the mayor had been authorized to borrow an additional \$10,000 for this purpose. The following January the city budget for the year 1830 as published in the newspapers showed an appropriation of another \$10,000 for further extending the city water system, \$600 for the superintendent, \$600 for the engineer of the water works, and the sum of \$5,837.90 covering interest on city debts incurred by the water project.<sup>35</sup>

By this time Pittsburgh, for its day, had a surprisingly good municipal water system. An observer in 1830, who described the water works as "a noble and valuable monument of liberality and enterprize [*sic*]," stated that the water was raised 116 feet above the Allegheny to a reservoir on Grant's Hill by means of a fifteen-inch pipe some 2,439 feet in length. The reservoir, which was eleven feet deep, was estimated to hold approximately one million gallons, and was kept filled by an eighty-four horsepower steam engine capable of pumping one and a half million gallons of water into the reservoir every twenty-four hours.<sup>36</sup> When the reservoir was first built, it stood above and beyond the residential area of the town. Within a few years, however, the city gradually encroached upon and surrounded the reservoir, leading to its almost inevitable contamination in those pre-sewage days. As the nineteenth century and the city boundaries advanced, a series of reservoirs was built, but the city continued to

33 *Pittsburgh, Commemorating the Fiftieth Anniversary of the Engineers' Society of Western Pennsylvania* (Pittsburgh, 1930), 39.

34 *The Statesman*, December 3, 1828; January 7, 1829; March 4, 1829.

35 *Ibid.*, August 5, 1829; *Pittsburgh Gazette*, January 29, 1830.

36 "Pittsburgh," *The Register of Pennsylvania*, VII (1831), 280-81.

rely upon the river water, a factor which in the era before chlorination undoubtedly contributed to better health. The volume and velocity of the Allegheny and Monongahela Rivers combined with the relatively limited population along their banks in the nineteenth century probably guaranteed a relatively safe water supply. Certainly Pittsburghers were much better off depending upon the Allegheny and Monongahela Rivers than were most residents of urban areas who depended in those days largely upon shallow wells for their water.

In reviewing conditions in early nineteenth century Pittsburgh it is apparent that air pollution was a serious problem almost from the beginning of the century. It is equally apparent that the townspeople and visitors did not consider this smoke to be any hazard to health. The assumption frequently expressed that the sulphureous fumes from the coal fires had an antiseptic effect and thereby reduced the incidence of disease is scarcely acceptable in the light of present knowledge. Whether or not dust and smoke have a deleterious effect upon health may be debatable, but no one would argue that the blackened lung condition known to pathologists and anatomists as "Pittsburgh lung" was conducive to well-being.

It seems logical to assume that the primary impact of the omnipresent smoke would have been an increase in the prevalence of respiratory disorders. Yet it appears that Pittsburghers and their visitors believed that the incidence of such medical problems was actually lower than was the case in the Eastern section of the state. One of the difficulties in evaluating the role of respiratory ailments in the days prior to the conquest of the major epidemic diseases is that these killer diseases overshadowed all other forms of sickness. The medical profession and the public were too concerned with the dangers from such highly fatal diseases as smallpox, Asiatic Cholera, typhoid, and diphtheria to become overly concerned with chronic disorders. Or if they did become apprehensive, they were far more likely to concentrate upon the recurrent ailments such as malaria and the various diarrheal complaints. Unless respiratory disorders assumed the highly fatal forms of tuberculosis or pneumonia, neither the medical profession nor the public was much likely to give them more than passing notice.

Until the virtual elimination of the major epidemic scourges the medical profession had little time or occasion to notice the long and slow attrition resulting from chronic insults. Only after the removal

of the more obvious causes of morbidity and mortality and the resultant lengthening of the life span was it possible to recognize the fact that there were subtle forces slowly and almost imperceptibly eroding away the human body.