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## YELLOWJACK

### THE YELLOW FEVER EPIDEMIC OF 1878 IN MEMPHIS, TENNESSEE

THOMAS H. BAKER \*

In the 1870's, Mrs. Kate Bionda and her husband ran a snackhouse in Memphis, Tennessee, catering to riverboatmen. The little shop was on Front Row, near the steamboat landing and in the slum section called "Pinch" or "Pinchguts," a wry comment on the poverty of the inhabitants of the neighborhood. Mrs. Bionda, one insignificant resident of a large city, was not of the sort that history notices or remembers—except for one thing. She got sick in the late summer of 1878, and on August 13, there in her rooms above the snackshop, she died. A physician saw her, noted the symptoms, consulted with other doctors, and then announced to a frightened city that she had died of yellow fever. Mrs. Bionda, age thirty-four, thereby became the first formally designated victim of an epidemic that would claim 5,150 lives, more than a tenth of the city's population, in one of the most severe yellow fever epidemics in American history.

Memphis, up to that time, had taken Civil War and Reconstruction in stride, hardly pausing in its growth. Where there had been 22,000 people in 1860, there were now about 48,000, an exciting—and excitable—mixture of old-stock Southern whites, immigrant Irish, and Negroes, with a few Germans, French, Italians, and Chinese here and there. The city's location, in the midst of one of the world's major cotton-producing areas and on the trade routes of the Mississippi River and three railroads, offered a bountiful future.

There were, of course, some problems, easily dismissed as growing pains. The municipal government, inefficient and probably corrupt, teetered on the edge of bankruptcy, but the citizens were too busy to worry about that—such civic apathy was another problem in itself, though not many realized it. And the city was dirty. There was little street paving other than rotting wooden blocks in some places, no adequate scavenger system for garbage and refuse, and few sewers for the tens of thousands of outdoor privies. Through the northern part of the city meandered

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Gayoso Bayou, once clear running water but now a series of stagnant pools, clogged with debris.<sup>1</sup> An ineffectual Board of Health from time to time resolved to enforce the ordinances against allowing pigs and goats to roam loose, or to improve upon the bucket-and-cart system of emptying privies, but the Board had little public or official support.<sup>2</sup> In fact, about the only time people could be brought to worry about the filth and odor was when rumors of the dread yellowjack began to circulate.

Yellow fever was no stranger to Memphis or the other towns of the Mississippi Valley, which had been ravaged by epidemics since the late eighteenth century. So far Memphis had not suffered anything like the great New Orleans epidemic of 1853, in which 9,000 persons had died, but the fever had come often: first in 1855, with 75 deaths, then in 1867, with 250 deaths, and most recently in 1873, with an appalling total of 2,000 deaths.<sup>3</sup> Memphians were well aware that the attacks seemed to be getting worse as the city grew larger.

Familiarity with yellow fever had bred only fear, because there was no certain explanation of its cause or transmission. Empirical evidence indicated that there was a connection between filth and the fever; most doctors and laymen believed bad air or "miasma" either caused yellow fever or increased its virulency. Knowing from experience that the fever was not contagious in the usual sense of spreading directly from one person to another, doctors were baffled by the exact means of transmission. Some believed the germ was carried through the air; one, Dr. Josiah Clark Nott, had suggested as early as 1848 that many of the peculiar features of the disease could be explained by an insect vector, but his theory was little known and less accepted. Most authorities assumed the germs were spread by "fomites," the excreta, clothing, or bedding of an infected person, or anything a victim had touched.

The fomite theory gave rise to yellow fever quarantines. If, it was believed, a city could prevent the entrance of an infected person or of anything from an infected area, the fever could be avoided. Quarantine, although universally used, was always vehemently opposed by a minority,

<sup>1</sup> The best general account of Memphis through the 1880's is Gerald M. Capers, Jr., *The Biography of a River Town; Memphis, Its Heroic Age* (Chapel Hill: Univ. of North Carolina Press, 1939); see also his "Yellow fever in Memphis in the 1870's," *Mississippi Valley Hist. Rev.*, 1938, 24: 483-502. The population figure for 1878 is from *Sholes' Directory of the City of Memphis*, vol. V, 1878, p. 7.

<sup>2</sup> Memphis Board of Health, *Yellow Fever and the Board of Health—Memphis, 1878*, edited by Mildred Hicks (Memphis: Memphis and Shelby County Health Dept., 1964), pp. 2, 4. (Hereafter cited as Board of Health, Minutes.)

<sup>3</sup> J[ohn] M[cLeod] Keating, *A History of the Yellow Fever. The Yellow Fever Epidemic of 1878 in Memphis, Tenn.* . . . (Memphis, 1879), pp. 94, 133-139.

composed of doctors who thought the fever originated locally and businessmen who disliked the interference with trade.<sup>4</sup>

When all was said and done, yellow fever was as mysterious to the nineteenth century as the plague had been to the fourteenth century. One Memphian who survived the epidemic of 1878 later reviewed the medical authorities and the evidence and concluded “*that we really know nothing about yellow fever; that it is a law unto itself in its tenacity of life as well as in its inception, growth, and progress. . .*”<sup>5</sup>

In the early summer of 1878, when yellow fever was reported in the West Indies, the specter of another epidemic began to grow in the minds of Memphians. A number of citizens petitioned the city council for a quarantine, but the councilmen refused, because of either a lack of money or fear of disrupting trade. The president of the Board of Health, a Dr. R. W. Mitchell, who was to be one of the heroes of the coming epidemic, resigned in protest, and the remaining board members did what they considered the next best thing by instituting a long-overdue sanitation campaign, financed by contributions from businessmen because the city government had no funds.<sup>6</sup> Through June and into July, as the fever continued in the Caribbean, the quarantine debate continued in the Memphis newspapers. Not until July 26, when it was announced that the fever had spread to New Orleans, did the city establish quarantine stations against people and goods from New Orleans. The Board of Health then assured the restive citizens that Memphis did not and would not have yellow fever.<sup>7</sup>

<sup>4</sup> Secondary sources most useful for the history of yellow fever include Francis R. Packard, *History of Medicine in the United States* (New York, London: Hafner, 1963), John Duffy, *Epidemics in Colonial America* (Baton Rouge: Louisiana State Univ. Press, 1953), *id.*, *Sword of Pestilence; The New Orleans Yellow Fever Epidemic of 1853* (Baton Rouge: Louisiana State Univ. Press, 1966), *id.*, ed., *The Rudolph Matas History of Medicine in Louisiana* (Baton Rouge: Louisiana State Univ. Press, 1958-1962), Charles-Edward Amory Winslow, *The Conquest of Epidemic Diseases; a Chapter in the History of Ideas* (Princeton, N. J.: Princeton Univ. Press, 1944), Howard A. Kelly, *Walter Reed and Yellow Fever* (3rd. ed., rev. Baltimore: Norman, Remington, 1923), Marston Bates, *The Natural History of Mosquitoes* (New York: Macmillan, 1949). For Nott's theory see Emmett B. Carmichael, “Josiah Clark Nott,” *Bull. Hist. Med.*, 1948, 22: 249-255, and Palmer Howard Fitcher, “Notes on insect contagion,” *ibid.*, 1936, 4: 536-557. The first chapters of Keating, *Yellow Fever*, contain a comprehensive summary of the status of medical knowledge about the fever in the 1870's; the current standard medical reference is George K. Strode, ed., *Yellow Fever* (New York: McGraw-Hill, 1951). It is now known, of course, that urban yellow fever is caused by a virus transmitted by the *Aedes aegypti* mosquito, which prefers breeding places in artificial water containers.

<sup>5</sup> Keating, *Yellow Fever*, p. 44.

<sup>6</sup> Memphis (Tennessee) *Daily Appeal*, June 30, 1878, July 4, 1878, and July 11, 1878; Board of Health, Minutes, pp. 3-6; Keating, *Yellow Fever*, pp. 102-103.

<sup>7</sup> *Daily Appeal*, July 26-27, 1878; Board of Health, Minutes, pp. 6-9; Keating, *Yellow*

But fear and rumor would not be quieted. People doubted the efficacy of quarantine and distrusted the statements of doctors. Too often in the past physicians, unable to identify yellow fever or reluctant to report it for fear of starting a panic, had called the first cases malaria, bilious fever, or just "general fever." No matter what city officials, doctors, or newspapers said, the residents became increasingly afraid of another disaster like that of 1873.

On August 9, confusion multiplied at the news of a fever outbreak in Grenada, Mississippi, only a hundred miles away. In answer to a telegram from anxious Memphians, Grenada officials said there was no truth to the story, but at the same time a Grenada newspaper asked for doctors and nurses. The Howard Association of Memphis, a volunteer yellow fever medical and nursing organization, sent two representatives to Grenada to check on the situation firsthand. Meanwhile, a Memphis newspaper said, "No apprehension is now felt by sensible citizens that any yellow-fever will appear in our city this season."<sup>8</sup> Most of those sensible citizens were already packing to flee.

Sunday night, August 11, the two Howard men telegraphed back. "Yellow fever, and no mistake," they reported. "Sixty cases and five deaths today." The morning newspapers traditionally did not publish on Monday, but the confirmation from Grenada spread around town by word-of-mouth, no doubt getting worse at each telling. The news "created a sensation and somewhat of a panic among our citizens," a newspaper said later. Hundreds began to leave the city.<sup>9</sup>

Although the morning newspapers of Tuesday, August 13, announced that the fever in Grenada was at the epidemic stage, they still insisted that all was well in Memphis.

The public may rely upon it that whenever yellow-fever shows itself, as is not at all likely, the board of health, through the press of the city, will promptly report it. Keep cool! Avoid patent medicines and bad whisky! Go about your business as usual; be cheerful, and laugh as much as possible.<sup>10</sup>

It was not easy advice to take; on nearly every street corner, people gathered to talk about the fever, and to ask each other if—or when—they were leaving. And that day, Mrs. Bionda was dying.

The terse, official announcement was published the morning of August

*Fever*, pp. 105-106; *id.*, *History of the City of Memphis and Shelby County, Tennessee* (Syracuse, N. Y., 1888), vol. I, p. 653.

<sup>8</sup> Keating, *Yellow Fever*, pp. 106-107; *Daily Appeal*, August 11, 1878.

<sup>9</sup> Report of the president, Howard Association, in Keating, *Yellow Fever*, p. 330; *Daily Appeal*, August 13, 1878.

<sup>10</sup> *Ibid.*

14. Mrs. Bionda was dead, "undoubtedly a case of yellow fever," the first death within the city from the fever. (Actually, hers was only the first to be officially announced as definitely caused by yellow fever. Later it was established that at least ten cases, including four deaths, had occurred in the city between July 21 and August 13. Apparently uncertain diagnoses plus fear of panic had kept doctors from reporting them.<sup>11</sup> Fifty-five cases of yellow fever were announced on the 15th and 16th, but by then the panic was underway.

By foot, by railroad, by hacks, carriages, buggies, wagons, furniture vans, and street drays, thousands of people began streaming from the city on the 14th. "On any road leading out of Memphis," a nun who stayed remembered, "could be seen a procession of wagons, piled high with beds, trunks, and small furniture, carrying, also, the women and children. Beside these walked groups of men, some riotous with the wild excitement, others moody and silent from anxiety and dread." The railroad companies put on more cars, then special trains, but still they could not provide seats for all who wanted out. People filled the aisles and platforms of the trains. Refused admittance to over-crowded cars, men defied railroad officials and police, opened windows, and pushed their way in on top of others.<sup>12</sup> The unreasoning fear eclipsed such ordinary amenities as courtesy and generosity.

Most of the refugees left in the four days after Mrs. Bionda's death. When the Board of Health, ten days later on August 23, officially declared the fever epidemic in Memphis, the effect was anti-climactic.<sup>13</sup> About 25,000 persons, more than half the population, had already fled by then, to small towns and plantations in Mississippi and Arkansas, to the spas of East Tennessee and Virginia, and northward to St. Louis, Cincinnati, and Louisville.

Some of the refugees were in for a bitter experience. Surrounding towns had immediately erected quarantines against Memphians, enforced by shotguns in the hands of determined citizens. Weary and ill-equipped travelers, not allowed to stop, were shunted from place to place like lepers. One large group, for example, found themselves camping in an Arkansas forest after Little Rock officials refused to let their train near the city. Some quarantines went to fantastic lengths. It was said that guards in

<sup>11</sup> *Ibid.*, August 14, 1878; Keating, *Yellow Fever*, pp. 107, 146; *New York Times*, August 14, 1878.

<sup>12</sup> *The Sisters of St. Mary at Memphis; With the Acts and Sufferings of the Priests and Others Who Were There with Them during the Yellow Fever Season of 1878* (New York, 1879), p. 7; Keating, *Yellow Fever*, pp. 107-108.

<sup>13</sup> Board of Health, Minutes, pp. 26-27.

Brownsville, Tennessee, insisted on disinfecting a barrel of carbolic acid from Memphis, and that officials in Jackson, Mississippi, broke up an iron stove from Memphis, to "kill the germs."<sup>14</sup>

Most refugees wisely had decided not to escape by steamboat, for it was suspected that those who did were likely to find a special kind of hell: trapped with the disease on a riverboat that would not be allowed to land any place. The steamboat *John D. Porter* moved up the Mississippi and Ohio rivers for two months, like some cursed Flying Dutchman, refused a dock everywhere because she had fever aboard. Eventually twenty-three persons died aboard her.<sup>15</sup>

Some of the refugees, of course, carried with them the infection they thought they were avoiding. At least a hundred Memphians died in nearby towns; presumably these and others helped spread the fever through the Mississippi Valley, in spite of the quarantines.<sup>16</sup>

Meanwhile, those too poor, too brave, or too foolhardy to go away were left in Memphis to face the epidemic. After the exodus of refugees, and after about 1,500 persons had been moved to camps on the outskirts, about 20,000 persons remained in the city. Of these about 14,000 were Negroes—probably only a thousand Negroes had fled—and the remaining 6,000 were whites.<sup>17</sup> They must have been terror-stricken at the prospect before them, for one of the few things definitely known about yellow fever was that the epidemic would continue until the first frost, usually in October, or until everyone in the city had taken sick.

The epidemic struck with frightening swiftness and severity; within a week after the announcement of the first cases, thousands were sick. So rapidly did the fever spread that half of those who got sick in the first weeks were not seen by a doctor. "Weeks of suffering before us," a minister wrote. "Numbers dying for want of attention which we are powerless to give—God help us—" It seems likely that through the first half of September, at least two hundred persons died each day.<sup>18</sup> Before

<sup>14</sup> *New York Times*, August 18, 1878; Keating, *Yellow Fever*, p. 147; the Rev. D. A. Quinn, *Heroes and Heroines of Memphis, or Reminiscences of the Yellow Fever Epidemics That Afflicted the City of Memphis during the Autumn Months of 1873, 1878, and 1879 . . .* (Providence, Rhode Island, 1887), pp. 225-226.

<sup>15</sup> Keating, *Yellow Fever*, p. 95.

<sup>16</sup> See the death lists in *The Epidemic of 1878, in Mississippi. Report of the Yellow Fever Relief Work through J. L. Power, Grand Secretary of Masons and Grand Treasurer of Odd Fellows . . .* (Jackson, 1879), *passim*.

<sup>17</sup> Keating, *Yellow Fever*, p. 116.

<sup>18</sup> Report of the medical director, Howard Association, in *ibid.*, p. 366; Papers of the Rev. George C. Harris, Dean of St. Mary's Episcopal Cathedral, press-book of letters sent, August 30, 1878 (Cossitt Library, Memphis). The statistics published regularly in the *Daily Appeal* during the epidemic are, in comparison with the final total of deaths, too low by about half.

the end of the epidemic late in October, eleven weeks after the first cases, there would be about 17,000 cases and more than 5,000 deaths.

During these harrowing weeks, the city appeared to be desolate and deserted, almost literally a tomb. Few ventured into the streets; doctors, nurses, and volunteer workers on their rounds met only each other. Even dogs, cats, and rats seemed to be less numerous than usual. The weather was unseasonably hot and humid, with high temperatures in the eighties through September. Mosquitoes, an editor remarked, unaware of their significance, were "as vigorous and desperate as ever."<sup>19</sup> Almost all commercial traffic and business activity had stopped, but the stillness was broken occasionally by loud blasts, as gunpowder was detonated in the hope of lifting the deadly "miasma." At night burning tar barrels, another futile attempt to "clear the air," garishly lit the streets. At first the funeral bells tolled continuously, but the custom was suspended to spare the feelings of the sick and dying. Many who survived remembered as especially haunting the sight of little piles of burned clothing and bedding outside houses, each charred bundle a sign someone had died there.<sup>20</sup>

Superstition, experience, and medical theory offered a bewildering variety of preventives for yellow fever, none of them either agreed upon or fully trusted. On the community level, authorities tried to clear the air with the fires and explosions, methods that date back at least to ancient Greece, and also attempted to kill the fever germs on the ground by disinfecting streets and houses with lime or carbolic acid. Individuals used a number of medicines, talismans, and techniques. It was suggested that people should take quinine, castor oil, jalap, calomel, potash solution; sponge-bathe with whisky and water, but avoid drunkenness; eat moderately, keep out of the night air, go to bed early, sleep high in buildings.<sup>21</sup> Some tried truly heroic measures, such as the man who "had recourse to garlic and onions, which he used three times each day; and to sulphur, which he used in his stockings; and to sulphur and gin, of which he drank as his fears prompted. He was taken with the fever and died on the fourth day." Physicians often prescribed a bag of asafoetida to be worn around the neck; at least one person tried and gave up, saying, "Here, let me die if I will, but I shall never be brought to my grave with such a

<sup>19</sup> *Daily Appeal*, August 21, 1878. Mosquitoes had been bothersome all through the hot, wet summer; see also *ibid.*, July 3 and July 10, 1878. The temperature was published daily in the newspaper.

<sup>20</sup> *Sisters of St. Mary*, p. 7; Keating, *Yellow Fever*, pp. 110, 122; J. P. Dromgoole, *Yellow Fever; Heroes, Honors, and Horrors of 1878 . . .* (Louisville, 1879), p. 61.

<sup>21</sup> All of these suggestions are from the *Daily Appeal* during the first weeks of the epidemic.



detestable odor." Once during the epidemic there appeared the singular figure of a man dressed in a flowing toga-like costume, with a large sponge tied around his neck, walking precisely down the middle of a street.<sup>22</sup>

Many thought yellow fever was not solely physical in origin and therefore could not be prevented by medicine alone. An eccentric New Yorker informed Memphians that they were suffering from "a mental, moral malady . . . born of panic, based on gormandizing diseased animal food—fish, eggs, butter." "If you have faith," he promised, "I will stop the pestilence."<sup>23</sup> Victorian moralists liked to believe that "those whose energies had been exhausted by debauchery" were particularly susceptible to the fever, but unfortunately for that idea "neither cleanliness nor right living were a shield to stay the hand of this destroyer." Still, a clergyman's advice came near to being the most practicable, given the state of medical knowledge: "An equable mind, which comes of a firm trust in God and an implicit reliance on His providence, is not the least valuable preventive of this as of every other disease."<sup>24</sup>

Yellow fever in epidemic proportions was a terrifying disease, marked by a sudden beginning, a swift and unpredictable course, and ghastly symptoms. The first sign of an attack was a chill, accompanied by headache, back pains, nausea, and constipation. Fever then developed, to last a few hours or a few days. After this first stage came a period of calm, or remission, which was the most critical time. Some cases would go into convalescence from there; others would move to the severe final stage. The fever returned, all other symptoms intensified, and there occurred the jaundice, which gave the disease its English name, and the "black vomit," which was the origin of the vivid Spanish name, *vomito negro*. The black vomit, the most definite sign that the disease was yellow fever and not some other type of fever, was caused by the regurgitation of blood and mucus from the stomach. Cases that progressed to that stage usually, but not always, ended in death. The course of the disease, from first symptoms to convalescence or death, took from three to seven days. In 1878 the fever seemed so virulent that physicians who had witnessed the epidemic of 1873 thought they were confronted by a new strain of yellow fever, "something more deadly in its ravages."<sup>25</sup>

<sup>22</sup> Keating, *Yellow Fever*, p. 31; Quinn, *Heroes and Heroines*, pp. 89-90; *Daily Appeal*, September 6, 1878.

<sup>23</sup> Letter from George Francis Train, *Daily Appeal*, September 22, 1878. Train was notorious at the time as a champion of unusual causes and fads; see *Dictionary of American Biography*, vol. XVIII, pp. 626-627.

<sup>24</sup> Keating, *Yellow Fever*, pp. 112, 32.

<sup>25</sup> Marshall Wingfield, "The life and letters of Dr. William J. Armstrong," *West Tennessee Historical Society Papers*, vol. IV (1950), p. 106.

As the epidemic progressed, horror piled upon horror for Memphians. Many died alone, covered with their black vomit and excreta. In some rooms parents were found dead, while children, sick and well, crawled in the filth. Several times babies, dead and alive, were discovered on their dead mother's breast. In the warrens of the "Pinch" section, where crowding made the epidemic the worst, bodies went days without discovery. Some corpses were found partially eaten by rats, and at least a few were so badly decomposed when discovered that they had to be rolled in the bedding for removal.<sup>26</sup> Whole families were wiped out. The widow Mrs. Barbara Flack, for example, was joined in death by all of her seven children, aged twenty-eight to eighteen. Mr. and Mrs. R. W. Blue, their fourteen-year-old daughter, and their seven-year-old son were all buried on the same day. Two days later someone—there were no members of the immediate family left—buried the last child, a three-year-old boy.<sup>27</sup> A few were driven to madness; one young girl was found wandering along the riverfront, naked and incoherent, apparently seeking to drown herself.

Most minds could not, or would not, absorb the full extent of the epidemic. "The most dreadful sense of horror," a Catholic priest recalled, "was the fact that, in a short time, those ghastly sights would fail to inspire terror. You would begin to get used to all these sad and sickening sights."<sup>28</sup> An Episcopal nun noticed the same tendency to become

perfectly hardened to these things—carts, with eight or nine corpses in rough boxes, are ordinary sights. I saw a nurse stop one today and ask for a certain man's residence—the negro driver just pointed over his shoulder with his whip at the heap of coffins behind him and answered, "I've got him here in his coffin."<sup>29</sup>

Undertakers, coffin-makers, and grave-diggers, working night and day, were unable to keep up with the staggering number of dead to be buried. Coffins or hastily-assembled rough boxes containing the dead "piled up like goods boxes on our pavements in several streets," awaiting transportation to the cemetery. Some people resorted to hiring public hacks to take bodies for burial, until the Board of Health forbade the practice, more for sanitary than for esthetic reasons. Elmwood, the principal cemetery, usually had three or four interments a day, but as many as fifty yellow fever victims were buried daily during late August and early September. Some of the dead could be identified for the cemetery records only by a first or a last name, or as "daughter of H. H. Crowell," "child of E. B.

<sup>26</sup> These examples are taken from the *Daily Appeal* during the epidemic weeks.

<sup>27</sup> Dromgoole, *Yellow Fever*, pp. 66-67; Elmwood Cemetery Archives, Daily Burial Record, Book II, 1878-1891, pp. 9, 12 (Memphis).

<sup>28</sup> Quinn, *Heroes and Heroines*, p. 192.

<sup>29</sup> *Sisters of St. Mary*, p. 17.

Goodwin." Funeral services were curtailed or omitted, partly because there were seldom enough well persons to pay their respects to the dead, and partly because people were afraid to risk infection by gathering in groups. The funeral of young Jefferson Davis, Jr., son of the former president of the Confederacy, attracted the largest crowd of any during the epidemic, fifteen mourners.<sup>80</sup>

Undertaker Jack Walsh, who had the contract for burying the pauper dead of the city and the county, buried about 2,500 bodies in a six-weeks period, many of them not paupers but persons with no family alive or present to claim the body. Walsh eventually had 130 employees, a lumber yard, and four furniture vans for carrying coffins. He received a great deal of criticism, for allegedly storing bodies in his stable until he had enough to warrant a trip to Potters Field, and for burying some of the dead in unmarked trenches.<sup>81</sup> The latter charge was probably true; even at Elmwood the shortage of grave-diggers necessitated trench burials, in an area still unmarked and called by cemetery officials "no man's land."

The established civic institutions collapsed almost immediately under the onslaught of the epidemic. So many city councilmen and aldermen fled in the first days of the panic that the general council was unable to assemble a quorum, then or later. The Board of Health met daily until the end of August, when illness took several of its members, but it had neither the power nor the financial resources to organize for a disaster of this magnitude.<sup>82</sup> A third of the police force resigned and fled; all but six of those remaining got the fever. As early as August 20 thirteen Negroes, under the command of the Negro janitor and cook at the station house, were added to the force. The fire department at one time had only seven men well and on duty.<sup>83</sup> Although the municipal government became nearly useless as an institution, many civic officials remained to work as individuals, among them Mayor J. R. Flippin, Sheriff J. W. Anderson, Police Chief P. R. Athey, Health Officer Dr. J. W. Erskine, and Congressman H. Casey Young. Each of these got the fever and one, Dr. Erskine, died.

Fortunately for the citizens, volunteer agencies arose to take over the

<sup>80</sup> Memphis Knights of Honor, *Epidemic of 1878; Report of the Central Relief Committee . . .* (Memphis, 1879), p. 33; Board of Health, Minutes, p. 25; Elmwood Cemetery Archives, *loc. cit.*, *passim*; Keating, *Yellow Fever*, p. 190; Harris Papers, press-book of letters sent, October 26, 1878.

<sup>81</sup> Walsh's considerable troubles can be traced in Keating, *Yellow Fever*, p. 187, Knights of Honor, *Report*, pp. 22, 33, *New York Times*, August 28, 1878, September 8, 1878, and Board of Health, Minutes, pp. 23, 33, 35-37.

<sup>82</sup> *Daily Appeal*, August 15, 1878; Board of Health, Minutes, *passim*.

<sup>83</sup> *Daily Appeal*, August 20, 1878; Keating, *Yellow Fever*, pp. 112, 182.

government of the city and the care of the sick. A Citizens' Relief Committee, formed at a mass meeting on the third day after the panic started, assumed authority and efficiently provided most of the services of an established government and the additional measures required by the epidemic. Most of the thirty to forty men who made up the Committee were prominent and wealthy citizens, who could have fled, but who chose to remain out of a sense of loyalty and duty.<sup>84</sup>

The Committee's first act was to establish a camp on the outskirts of the city, in an effort to remove as many uninfected persons as possible and thereby allow the fever "less material to feed upon." Eventually about a thousand persons occupied Camp Joe Williams, named for a physician who had died in the 1873 epidemic, and a number of smaller camps around it. Quartered in tents rushed to Memphis by the Secretary of War at the Committee's request, the residents of the camp lived under military discipline, from reveille at 5 a. m. through clean-up details to taps at 10 p.m. Its location kept "Camp Joe" free of all but a few cases of fever, presumably persons who had been infected in the city.<sup>85</sup>

What remained of the police force was put under the command of the Committee, but fear of looting prompted the calling up of the local militia. Previously thought more ornamental than useful, the military companies proved to be an effective police force. A white company was assigned to Camp Joe Williams, with a special train standing by to bring it into the city if necessary. Two Negro companies were put on duty within the city, guarding supplies, patrolling the streets, and by their presence reminding potential trouble-makers that the law still existed. There was some petty thievery, mostly of food and clothing, but the use of the militia and the establishment of a rigid curfew kept crime to a minimum, probably less than the usual amount for Memphis.<sup>86</sup>

Because normal business and commercial activity had all but ceased, starvation seemed to be as real a danger as the fever, so the Citizens' Committee undertook a massive relief and welfare program. With donations of money and supplies from Memphis and elsewhere, the Committee was taking care of an estimated 40,000 persons by October, including not only Memphians but also residents of many of the surrounding towns. Among the rations given out were 290,000 pounds of bacon, 27,000 pounds of ham, 5,000 pounds of beef, 2,300 barrels of flour, 10,000 pounds of bread, 23,000 pounds of crackers, 20,000 pounds of beans,

<sup>84</sup> *Daily Appeal*, August 17, 1878; Keating, *Yellow Fever*, pp. 390-392.

<sup>85</sup> Report of surgeon in charge of Camp Joe Williams, in *ibid.*, pp. 393-395.

<sup>86</sup> *Ibid.*, pp. 112-113, 129-133.

16,000 pounds of rice, 32,000 pounds of coffee, 490 gallons of molasses, 2,700 pounds of candles, 8,000 pounds of soap, 200 gallons of whisky, seventeen gallons of brandy, two gallons of gin, and a hundred cigars.<sup>37</sup>

The Committee's main customers, and principal worry, were the 14,000 Negroes in the city, nearly three-fourths of the reduced population. The outnumbered white men expected, and at first believed they saw, considerable boisterousness, impudence, and thievery on the part of the Negroes. The Committee prudently added Negro leaders to its membership, as well as using the Negro militia companies, and it also threatened to shut off the rations if necessary. Actually, there was little to fear. The Negroes in general behaved, as a white man said later, "with a quiet patience characteristic of their race, deserving all praise."<sup>38</sup> Many Negroes served faithfully as nurses, and Negro servants trustworthily guarded the houses of their refugee white employers. During the epidemic there were rumors of "wholesale rape of white women" by Negro nurses, but no such incidents were proved.<sup>39</sup>

If any Negroes had been planning to make trouble, they must have been sobered by the fact that this time, unlike previous epidemics, the fever was attacking large numbers of Negroes. The white men recalled an old anecdote: once during fever season an old Negro announced to a group of his race gathered around the carcass of a mule on Main Street, "Colored sisters and brothers: when de Feber takes de mule, de Nigger ha n't got no show."<sup>40</sup> It was believed, on the basis of experience and observation, that most Negroes had a natural immunity to yellow fever, but in 1878 probably 11,000 Negroes got the fever in Memphis. The Negro mortality rate, however, was less than ten per cent, much lower than that of the whites.

While the Citizens' Committee provided a government for the stricken city, the trained and experienced workers of the Howard Association took over the difficult task of medical care. Patterned after a group founded in New Orleans during the epidemic of 1837 and named for a British philanthropist, the Memphis chapter had been created after the epidemic of 1867 and had proved its worth in the larger epidemic of 1873. Member-

<sup>37</sup> Report of commissary department, Citizens' Committee, in *ibid.*, pp. 392-393.

<sup>38</sup> Dromgoole, *Yellow Fever*, pp. 63-64. See also the *New York Times*, August 22, 1878, and the *Daily Appeal's* fervent defense of the Negroes, September 14, 1878.

<sup>39</sup> Harris Papers, letters received, August 31, 1878; Keating, *Yellow Fever*, p. 113.

<sup>40</sup> Quinn, *Heroes and Heroines*, p. 90. Other epidemics also show, in varying degrees, a similar difference in rates of susceptibility and mortality, but the reason for the difference is not clear. Letter to the author from Cyrus C. Hopkins, M. D., Neurotropic Viral Diseases Unit, Viral Diseases Section, Epidemiology Program, National Communicable Disease Center, Atlanta, Georgia, August 24, 1967; see also Strode, ed., *Yellow Fever*, esp. pp. 169-170, 399.

ship, limited to twenty-five or thirty, was drawn mostly from young businessmen and was considered a signal honor, although the members knew the work was dangerous, for the Howards did nothing but serve in yellow fever epidemics.<sup>41</sup>

The Howards' special talent was for organization. More aware than most of what was in store, the members of the Association had assembled for duty on August 13, the day of Mrs. Bionda's death. Within days they sent out the first of what would soon be a corps of more than a hundred doctors and nearly 3,000 nurses. One Howard member was in charge of each of the ten wards in the city, assisting the doctors assigned to that ward, placing nurses, arranging transportation and burial, and providing, if necessary, medicine, food, clothing, and blankets. A central office coordinated the work in the wards and maintained a warehouse of supplies, working closely with the Citizens' Relief Committee. The Howards' devotion to duty is indicated by their medical record: of the forty men who already belonged or were recruited during the epidemic, thirty got the fever and eleven died.<sup>42</sup>

All but a few of the physicians at work in Memphis were affiliated with the Howard Medical Corps, under the direction of Dr. Mitchell, the man who earlier had resigned in protest from the Board of Health. The Corps employed 111 doctors, a fourth of them Memphians, the rest volunteers from other places. Although Dr. Mitchell asked that the volunteers be "acclimated," immune to yellow fever because of a previous case, some must have misled him, for there were fifty-four cases and thirty-three deaths among the doctors.<sup>43</sup>

The doctors had an almost unbearable load of patients. Dr. William J. Armstrong, for example, saw forty-five to fifty sick persons a day. He had 127 cases in his ward before the Howards could spare another doctor to assist him, but even with help the strain was mentally and physically exhausting. "I wish," he wrote his family,

I could go to some secret spot where there would be no burning heads and hands to feel, nor pulses to count, for the next six months. It is fever, fever all day long and I am so weary of giving directions. . . . I do not know what to think or do. . . . Nothing but distress and death on all sides and everyone pulling at a poor doctor to come this way first.

For this Dr. Armstrong, like the rest of the Howard doctors, was paid \$60 a week, although the money was to be of little use to him. Dr.

<sup>41</sup> Duffy, *Sword of Pestilence*, pp. 31-32; Keating, *Yellow Fever*, pp. 106, 135. Apparently there was no direct connection between the Memphis and New Orleans groups.

<sup>42</sup> Report of the president, Howard Association, in Keating, *Yellow Fever*, pp. 330-331.

<sup>43</sup> Report of the medical director, Howard Association, in *ibid.*, pp. 365-371.

Armstrong, a Memphian and a veteran of the epidemic of 1873, died of yellow fever in the fourth week of the epidemic.<sup>44</sup>

The method of treating yellow fever was as controversial as everything else connected with the disease. Many physicians still relied on heavy medication, especially massive purges of calomel, rhubarb, or jalap, and some had pet remedies as esoteric as "tisane of watermelon seed." Others used the cold-bath treatment, which involved dousing the feverish patient with buckets of cold water, drying briskly, then covering with blankets to induce perspiration. It is little wonder that some of the sick refused to allow a doctor to come near them, or turned to assorted quacks and healers.<sup>45</sup>

Most physicians, however, had come to reject drastic treatments, either out of reason or desperation. The director of the Memphis City Hospital, Dr. G. B. Thornton, believed that there was a fixed course the disease must run, that there was little a doctor could do about it, and that therefore medication should be kept to the minimum necessary to make the patient comfortable. Dr. Mitchell of the Howard Corps said later the method most used in Memphis was to encourage "absolute rest of mind and body," to keep the bowels open with small doses of castor oil or calomel, to warm chills with blankets and cool fevers with sponge baths, to reduce food and drink, and to give other medication only if needed to calm delirium.<sup>46</sup> Actually, the wisest doctors realized that they could not cure yellow fever but could only alleviate its symptoms. They felt the frustration deeply. "We poor doctors stand abashed at the perfect uselessness of our remedies," Dr. Armstrong said. "I feel sometimes as if my hands were crossed and tied and that I am good for nothing, death coming in upon the sick in spite of all that I can do."<sup>47</sup>

The doctors working for the Howard Association tried to probe the mysteries of yellow fever through an organized research program. About 300 autopsies were performed, in an effort to determine the cause of the disease, and nightly meetings were held to compare observations, treatments, and theories. But after it was all over they knew little more than they had before. "We can write and talk learnedly of epidemic and other forms of disease," a Tennessee physician later admitted to his fellows,

<sup>44</sup> Wingfield, "Life . . . of Dr. William J. Armstrong," *passim*. The quotation is from pp. 107 and 109.

<sup>45</sup> These methods are taken from the secondary sources cited in fn. 4, above, and from the *Daily Appeal*. Dr. Armstrong wrote his wife, "Mr. Torrance died today . . . unattended. I offered to do anything for him but he was so adverse to my profession that I could not serve him." Wingfield, "Life . . . of Dr. William J. Armstrong," p. 111.

<sup>46</sup> Keating, *Yellow Fever*, pp. 51-53, 72.

<sup>47</sup> Wingfield, "Life . . . of Dr. William J. Armstrong," p. 108.

“but when in the midst of a visitation . . . we are so overwhelmed with our impotence, and the unsatisfactory result of treatment, that we lose faith in our boasted knowledge.”<sup>48</sup>

Comparatively few patients were admitted to hospitals, because there were not enough hospital beds for the thousands of sick. The City Hospital, operated in conjunction with a medical school, treated 460 cases. The Howard Association converted two public schools into infirmaries, one on Market Street for whites, which was usually filled to its capacity of several hundred, and one on Linden Street for Negroes, which seldom had many patients.<sup>49</sup>

Most of the sick were cared for in their homes, by nurses provided by the Howard Association and other groups. Nursing was not yet a recognized profession; the nurse's function basically was to sit with the patient. “The more ignorant, if obedient, the nurses the better,” one physician said. “The nurse should have only enough sense to obey orders. Dumb nurses would be ideal in all critical or extra critical cases.”<sup>50</sup> Possibly as many as 4,000 persons worked as nurses in Memphis during the epidemic, 2,995 of them employed by the Howards. Most were Memphians, white and Negro, but about 500 were volunteers from twenty-six states, including contingents of thirty or more from Charleston, Little Rock, Mobile, New Orleans, and Shreveport. Many of these volunteers were especially valuable because of their experience in other epidemics, and some were affiliated with groups similar to the Howard Association. The motives of the nurses ranged from the desire to make money—they were paid three to four dollars a day, and the Howards spent \$185,000 on nurses—to a selfless devotion to aiding the sick. About two-thirds of the nurses were men; most men patients preferred male nurses.<sup>51</sup>

Much criticism was leveled at the nurses. One doctor said of a patient, “It took four [nurses] to kill her”: one stole her clothes and ran, one got drunk and neglected her, one took sick and died, and the fourth also got drunk and fell over the bed. Reports of theft by nurses were common;

<sup>48</sup> Dr. W. C. Blackman, quoted in Philip M. Hamer, ed., *The Centennial History of the Tennessee State Medical Association, 1830-1930* (Nashville: Tennessee State Med. Ass., 1930), pp. 88-89.

<sup>49</sup> Report of the City Hospital, in Keating, *Yellow Fever*, pp. 388-389; report of superintendent of infirmaries, Howard Association, in *ibid.*, pp. 381-388.

<sup>50</sup> Dr. R. D. Murray, in United States Public Health Service, *Yellow Fever: Its Nature, Diagnosis, Treatment, and Prophylaxis . . .* (Public Health Bulletin No. 4, Washington, 1898), p. 33.

<sup>51</sup> Report of superintendent of nurses, Howard Association, in Keating, *Yellow Fever*, pp. 371-376; report of auditing committee, Howard Association, in *ibid.*, p. 365. Nurses from Memphis received three dollars daily and board; those from elsewhere received four dollars daily, board, and lodging. *Daily Appeal*, September 26, 1878.



more than once a nurse who died on duty was found with a trunk containing silverware and clothes from the house of his patient. There were also charges of drinking and lewd conduct among male and female nurses, resulting in neglect of the patients.<sup>52</sup> These stories are probably true, but their extent was undoubtedly exaggerated at the time; it is likely that the majority of the nurses conscientiously performed their limited duties.

The work of the Howard Association and the Citizens' Committee was made easier by the fact that a few business concerns, particularly those in communication and transportation, continued to function during the epidemic. The telegraph office was highly praised for keeping the lines open to the rest of the nation, in spite of the high mortality rate among the operators. Eleven of the twenty-five men in the Memphis office and eight volunteers from other offices died on duty, causing some to speculate that there was a causal relationship between electricity and yellow fever. The post office also stayed open, through the deaths of the postmaster, his assistant, and eight employees. The railroads ran special trains to bring in supplies, including once a whole train-load of coffins. Some banks were open at least a few hours each day, to handle the donations of money from other places, and one hotel, the Peabody, offered food and lodging for the out-of-town volunteers. Although reduced to single sheets, three of the four daily newspapers continued to publish. Their troubles are illustrated by the example of the *Daily Appeal*: at one time only the editor, J. M. Keating, and one printer, Henry Moode, were well and able to work. In addition to putting out the newspaper by themselves, Keating was a member of the Citizens' Committee and Moode was in charge of the Typographical Union infirmary.<sup>53</sup>

Fraternal organizations took part of the burden of caring for the sick. Infirmarys and relief programs for members and their families were organized by the Masons, the Odd Fellows, the Knights of Honor, the Knights of Pythias, the Ancient Order of Workingmen, the Independent Order of Mutual Aid, the Typographical Union, the Hebrew Hospital Association, the Italian Fraternal Union, and the Association for the Relief of French Residents.<sup>54</sup> Together these groups cared for about 2,500 persons.

<sup>52</sup> Keating, *Yellow Fever*, pp. 162, 113-114.

<sup>53</sup> For the telegraphers, see report of telegraphers, in *ibid.*, pp. 426-427, and Dromgoole, *Yellow Fever*, p. 95; for the post office, see Keating, *Yellow Fever*, pp. 430-431; for the railroads, see report of the Memphis Branch, Louisville and Nashville Railroad, in *ibid.*, pp. 424-425; for the press, see *ibid.*, pp. 432-433, and *Daily Appeal*, September 5, 1878.

<sup>54</sup> The medical and financial reports of most of these groups are reprinted in Keating, *Yellow Fever*, pp. 405-424; see also the separate Knights of Honor, *Report, passim*.

The priests and nuns of the Roman Catholic Church showed an especially high degree of dedication and self-sacrifice. Most of the whites left in the city were of the poorer Irish class, almost all of them Catholics. The priests quickly established Camp Father Matthew outside the city for their parishioners, but only about 400 went to it, possibly because it was operated under the strict prohibition rules of the Catholic Total Abstinence Union. Within the city about fifty nuns of several orders became nurses, while probably twenty-five resident and volunteer priests found themselves increasingly hard-pressed to visit the sick and administer extreme unction to the dying. Thirteen priests and thirty nuns were among the victims of the epidemic.<sup>55</sup>

Although it was unthinkable that a Catholic priest would leave a parishioner who might need the last rites, the duty of the Protestant ministers was not so clear, and many of them joined the refugees. Their action touched off a major controversy; critics, in Memphis and elsewhere, bitterly condemned the absentee ministers for leaving their communicants "to die like dogs, without one word of consolation or hope." No accurate figures are available, but apparently more than half of the Protestant ministers fled at the outbreak of the epidemic. Those who stayed, however, were among the hardest workers, and the death toll included several ministers. One group of Protestants earned special distinction: all three of the Episcopal ministers and all four of the Episcopal nuns stayed, and were joined by two more ministers and three more nuns, volunteers from other cities. At the request of the Citizens' Committee, the Episcopal nuns took the responsibility of caring for most of the Protestant children orphaned by the epidemic.<sup>56</sup>

Heroism was too common during the epidemic for individual acts to be singled out. Everyone who stayed when he could have fled, everyone who worked with the sick, did so in the knowledge that he was risking death. The relief workers, the doctors and nurses, the men and women of the churches, the burial crews, all performed their duties while believing, because of the fomite theory, that to touch the sick or the dead, to clean up after them, and to handle their clothing or bedding, was to expose

<sup>55</sup> Quinn, *Heroes and Heroines*, is devoted almost entirely to the work of the Catholic priests and nuns; see also the report of Camp Father Matthew, in Keating, *Yellow Fever*, pp. 395-398.

<sup>56</sup> The controversy can be followed in *Daily Appeal*, September 20, September 27, October 2 (which includes the quotation), and October 4, 1878, and *Harper's Weekly* (New York), November 2, 1878. Accounts of the Episcopalians are in Harris Papers, scrapbook, *passim*, *Sisters of St. Mary*, *passim*, and John H. Davis, *St. Mary's Cathedral, 1858-1958; A History of St. Mary's Episcopal Church, Memphis . . .* (Memphis: Chapter of St. Mary's Cathedral, 1958), pp. 57-63, 67-76.

themselves to the infection. Dr. Armstrong, for example, refused even to send his wife a box of clothing for fear of transmitting to her germs from "this poisoned atmosphere," yet he continued to sleep in the same room with his patients. Even those who had had the fever before could not be certain of their immunity in this epidemic; many suffered their second, and sometimes fatal, case of yellow fever. Most of those who stayed resigned themselves to death. A minister advised a friend not to volunteer for service in Memphis immediately, but to wait: "You may come when somebody will have to take our place while we go to the long rest."<sup>57</sup>

Many of the workers did not allow themselves material comforts or even the luxury of grief. One of the nuns refused a mattress when she became ill, saying, "It is the only one you have in the house, and if I have the fever you will have to burn it." The anonymous author of the Knights of Honor Report apologized to his brethren for being absent from the relief office one day, "as he was detained away by the fatal illness of his only son."<sup>58</sup>

Charity turned up in unexpected places, such as Miss Annie Cook's house of prostitution, an old and well-known establishment. Annie discharged her girls and opened her house to the sick, nursing many herself until she, too, contracted a fatal case of the fever. The citizens were properly appreciative of this example of redeeming grace, and the Howard Association later removed her grave to its plot in Elmwood, erecting a headstone to her memory.<sup>59</sup>

If the epidemic brought out the best in some people, it also revealed the worst in others. Examples of callousness, insensitivity, and abandonment caused one editor to wonder "if our civilization is really a failure, and we are going back to the days of the London plague."<sup>60</sup> One John Donovan became the symbol of all those who cared for themselves more than others. He was safely out of the city, sixty miles away, and refused to return when told that his wife was dying and his three children were sick. Poor Donovan, who had rationalized that if he returned he would only die and leave his children orphans, did not come back home to face public opinion until three months after the epidemic was over.<sup>61</sup> Some of those who owned houses or lots away from the fever area profited by

<sup>57</sup> Wingfield, "Life . . . of Dr. William J. Armstrong," p. 111; Harris Papers, press-book of letters sent, August 30, 1878.

<sup>58</sup> *Sisters of St. Mary*, p. 30; Knights of Honor, *Report*, p. 26.

<sup>59</sup> *Daily Appeal*, September 12, 1878; Elmwood Cemetery Archives, *loc. cit.*, p. 5.

<sup>60</sup> *Daily Appeal*, September 26, 1878.

<sup>61</sup> Wingfield, "Life . . . of Dr. William J. Armstrong," p. 107, Quinn, *Heroes and Heroines*, pp. 134-138, and letter from Donovan, *Daily Appeal*, September 1, 1878.

renting them to refugees, at rates five times above normal.<sup>62</sup> Others on the outskirts resorted to force to keep people from the city away: mobs tried to prevent the establishment of Camp Joe Williams and an emergency orphanage but were faced down by a company of militia in the first case and by a single determined nun in the second.<sup>63</sup> The epidemic also aggravated the old antagonisms between rich and poor, natives and Irish, Protestant and Catholic, alignments that were nearly identical. Many of the poor openly accused the rich of deserting the city, and some Catholics protested that Protestant relief workers did not care what happened to the Irish.<sup>64</sup>

The epidemic spawned stories of the wonderful, the romantic, and the humorous. An authority said that the fever wrought at least one miracle, the case of an eleven-year-old girl who, after recovering from the fever, was also cured of paralysis. In the midst of the epidemic residents were charmed by the story of a young volunteer doctor from Mississippi whose first patient was a lovely nineteen-year-old girl. Love bloomed while he nursed her to convalescence; then he got the fever and she nursed him. When he recovered, the two of them married and presumably lived happily ever after. Circulating in the city were several ghoulish anecdotes that perhaps were funny only because there was so little to laugh at. One of a type inevitable in such epidemics was about the corpse, shrouded and encoffined, that was being prepared for burial. As the sexton started to screw down the coffin lid, the victim opened his eyes and inquired angrily, "What the hell are you doing?" "A little trepidated, if not consternated," a newspaper reported, "they lifted him from his close confinement and put him to bed." Another story, considered so good that it was told at least twice about two different people, had the family of the dead man asking the Negro servants to dress the corpse for burial in his fraternal regalia. The servants, to whom one fancy dress looked much like another, instead used the costume the man had worn for the last Mardi Gras. In the Irish version, the error is discovered in time, but the family decides to let it stand, "and so Dennis wint to glory all colors and spangles."<sup>65</sup>

<sup>62</sup> *Ibid.*, August 18, 1878, and *New York Times*, August 20, 1878.

<sup>63</sup> *New York Times*, August 19, 1878; *Sisters of St. Mary*, pp. 13-14.

<sup>64</sup> For indications of friction, see the letter signed "IRISH AND NEGROES," *Daily Appeal*, August 29, 1878, Quinn, *Heroes and Heroines*, *passim* and esp. p. 209, and report of Camp Father Matthew, in Keating, *Yellow Fever*, pp. 395-398; see also Sterling Tracy, "The immigrant population of Memphis," *West Tennessee Historical Society Papers*, vol. IV (1950), p. 75.

<sup>65</sup> The sources of these anecdotes are as follows: the miraculous cure, Keating, *Yellow Fever*, p. 115; the doctor's romance, *Daily Appeal*, October 4, 1878; the premature encoffining, *ibid.*, September 15, 1878; the two versions of the fancy dress story, Keating, *Yellow Fever*, pp. 180, 184.

Although the epidemic of 1878 was the most severe in Memphis, the fever spread to more than 200 towns in eight states, from Ohio to Louisiana. New Orleans alone had about 4,000 deaths, and the small towns of northern Mississippi together probably had as many. Medical authorities later estimated that there were 100,000 cases of fever and 20,000 deaths in the Mississippi Valley that year.<sup>66</sup>

The rest of the nation, aware of the plight of the stricken areas through newspaper and magazine accounts, offered sympathy and, more important, money. Memphis received about \$700,000 in cash donations, \$400,000 to the Howard Association, \$100,000 to the Citizens' Committee, the rest to churches and fraternal groups. Probably an equal amount was received by all of the other fever areas. Supplies of all kinds were also sent: tents and rations from the Secretary of War, food from ordinary citizens in nearby towns. A steamboat equipped with food, clothing, and medical supplies by a relief group in Washington, D. C., traveled the Mississippi River from St. Louis to New Orleans, giving aid where needed. Many saw the North's help to the South as another sign that the Civil War was indeed over, and one Yankee suggested that "an all-wise Providence" had designed the epidemic to reconcile the nation through suffering and charity.<sup>67</sup>

As the epidemic in Memphis was brought under control, the Howard Association and the Citizens' Committee there began to offer assistance to the smaller towns in neighboring Tennessee, Arkansas, and Mississippi. In the second week of October, teams of Howard members, doctors, and nurses went out by special trains, taking provisions and medical assistance to the towns along the railroad lines. They also brought badly-needed help to the two Memphis Howard men who had been in Grenada since early August, directing the entire relief and medical program there.<sup>68</sup>

Late in September the incidence of new cases began to decline, and cool nights offered the hope of frost and an end to the epidemic. The death rate still averaged twenty a day, however, and authorities feared that the refugees might return prematurely to give the fever thousands of new victims. "Refugees," warned the newspapers, "for God's sake stay away from Memphis." A few rash individuals chose to return anyway; one

<sup>66</sup> For the extent of the fever, see Dromgoole, *Yellow Fever*, pp. 107-125, Hamer, ed., *Centennial History of the Tennessee State Medical Association*, p. 87, Duffy, ed., *Matas History*, vol. II, pp. 428-429, and *Epidemic of 1878, in Mississippi*, *passim*.

<sup>67</sup> The figures were compiled by the author, largely from the several reports in Keating, *Yellow Fever*; the quotation is from *Epidemic of 1878, in Mississippi*, p. 222.

<sup>68</sup> Report of president, Howard Association, in Keating, *Yellow Fever*, p. 333.

minister who had survived the epidemic commented dryly, "I dare say some of *them* will give us work."<sup>69</sup>

The long-awaited frost finally occurred on the night of October 18/19. A rapid drop in the number of new cases and deaths allowed the Board of Health formally to declare the epidemic over on October 29, and Memphis began to return to normal. Outside of town, the camps disbanded. The occupants of Camp Father Matthew held a thanksgiving service on November 1, All Saints' Day, then marched into town in a procession headed by the little ark on wheels they had built. The next day Camp Joe Williams broke up, and the militia companies ended their service by parading down Main Street behind the Bluff City Cornet Band. The death records, for weeks one long list of "yellow fever, yellow fever," assumed their customary variety; people again died of consumption, "old age," indigestion, "gun or pistol shot," convulsions, and "gen'l debility." Refugees came home, to seek the graves of lost friends and relatives and to hear the stories of those who had survived.<sup>70</sup>

On Thanksgiving Day, November 28, the citizens held a mass meeting to praise the heroes of the epidemic, to thank the rest of the nation for its help, and to mourn the dead. The most reliable statistics that could be assembled by the Howard Association made clear the awesome extent of the epidemic. The population within the city during the epidemic was never more than 20,000 persons. Of these at least 17,000 had gotten the fever and 5,150 had died, a mortality rate of about one-fourth of the reduced population. Probably 11,000 of the 14,000 Negroes had taken the fever, but only 946 of them died. Of the 6,000 white who remained in the city, all but a very few got the fever and 4,204 died, an appalling mortality rate of seventy percent.<sup>71</sup>

Such an experience could not be easily forgotten or overcome. The value of the lost lives was incalculable, but businessmen did try to put a price on the loss of trade, with estimates as high as \$100,000,000. Moreover, there was considerable doubt about the future of Memphis, now burdened with a reputation as an incurable pesthole. Some outsiders coldly suggested that the site be abandoned, leveled, strewn with salt. "If we are to live here and prosper," a leading newspaper remarked, "it must be under circumstances wholly different from those which have surrounded us the past twenty years. . . . We must prefer the community to the

<sup>69</sup> *Daily Appeal*, October 1, 1878; Harris Papers, press-book of letters sent, October 21, 1878.

<sup>70</sup> Board of Health, Minutes, p. 41; Dromgoole, *Yellow Fever*, pp. 96-97; Keating, *Yellow Fever*, p. 428; Elmwood Cemetery Archives, *loc. cit.*, p. 34.

<sup>71</sup> *Daily Appeal*, November 29, 1878; Keating, *Yellow Fever*, p. 116.

individuals.”<sup>72</sup> The basic needs were clear: an improved municipal government, a thorough-going sanitation reform, and confidence in the future.

On the initiative of the business community, the incompetent and debt-ridden municipal government was abolished early in 1879 and replaced by a unique “taxing district” directly under state control. A structure of boards, similar to the commission plan that would be the hope of municipal reformers a generation later, the taxing district scheme provided an efficient government for nearly twenty years. Within months after its creation, an editor rejoiced in the absence of “the corrupt ward politician, the eager contractor, the incompetent official, alderman, and councilman.”<sup>73</sup>

Under the direction of a new and more powerful Board of Health, a part of the taxing district government, Memphis began to clean itself up. The public, previously uninterested in such campaigns, offered its full support. As one citizen said, “the hiding place of each particular germ & spore” should be scoured, including the “Bank vaults & rolls of paper money” and the “broadcloth of gentlemen.”<sup>74</sup> Within a decade, Memphis accomplished a remarkable improvement in public sanitation with the creation of a waste disposal system, an approved water supply, a street paving program, a residential renovation plan, and rigidly-enforced health ordinances.<sup>75</sup>

As soon as it had begun, the sanitation campaign was spurred by still another yellow fever epidemic, in the fall of 1879. Thanks to prompt evacuation and the immunity survivors of the 1878 epidemic had acquired, the toll this time was only 2,000 cases and 583 deaths, but the reputation of Memphis suffered another blow.<sup>76</sup> That was, however, the last yellow fever epidemic in the city, despite the presence of the fever in the Mississippi Valley in 1888, 1897, and 1898. The clean-up drive, although based partly on the faulty premise of clearing the “miasma” that created or spread fevers, did reduce the danger of epidemics by eliminating the

<sup>72</sup> John H. Ellis, “Business leadership in Memphis public health reform, 1800-1900,” *West Tennessee Historical Society Papers*, vol. XIX (1965), pp. 95-96; *Daily Appeal*, November 7, 1878.

<sup>73</sup> *Daily Appeal*, July 10, 1879. The taxing district plan is summarized in Capers, *Memphis*, pp. 203-204.

<sup>74</sup> Harris Papers, press-book of letters sent, September 22, 1879.

<sup>75</sup> Ellis, “Business leadership,” p. 98; William D. Miller, *Memphis During the Progressive Era, 1900-1917* (Memphis: Memphis State Univ. Press, 1957), pp. 113-120.

<sup>76</sup> *Daily Appeal*, July 21-November 2, 1879; Howard Association, *Report of Howard Association of Memphis, Tennessee, for Year Ending April 5, 1880* [Memphis, 1880], *passim*.

open sewers, outside privies, and cisterns where the fever-bearing mosquitoes bred.

The epidemic of 1878 in Memphis and the Mississippi Valley generated widespread interest in public health and community improvement, as evidenced by the development of several other municipal sanitation programs and the creation or strengthening of boards of health. In Tennessee, for example, a State Board of Health authorized in 1877 was not given adequate funds and power until 1879. Congress established, also in 1879, a National Board of Health—Dr. Mitchell of the Howard medical corps was honored with an appointment to it—but the board at first had only limited investigatory functions. Although the 1880's saw the beginning of a general public health movement, it would not be completely effective until the full acceptance of the germ theory and further medical discoveries about infectious diseases, most of which came in the 1890's.<sup>77</sup>

The conquest of yellow fever itself required another twenty years. In spite of a full-scale research program prompted by the events of 1878, the state of knowledge about the disease improved very little until the work of the Reed Commission in Cuba in 1900. The Commission proved the transmission of yellow fever by mosquitoes and disproved the fomite theory, which meant that the disease could be controlled by controlling the mosquito. It was not until the 1930's and 1940's that medical scientists isolated the yellow fever virus and developed a vaccine.<sup>78</sup>

The impact of the epidemic of 1878 marked Memphis for a long time afterward. Many businesses left during and after the epidemic, and others must have been dissuaded from moving to the city, whose advantageous location was offset by its deadly reputation. Memphis, which had doubled in population between 1860 and 1875, should have continued to grow rapidly, but instead the population dropped to about 33,000 by 1880—a decline of 15,000 from the 1878 figure. Population climbed to 64,000 by 1890, but in the meantime new rivals such as Atlanta, Birmingham, and Dallas had attracted some of the wealth and population that might have gone to Memphis. Gone, too, largely as a result of the epidemic, was the leaven of citizens of foreign descent that had given the city a

<sup>77</sup> Tennessee Department of Public Health, *First Report of the State Board of Health of the State of Tennessee, April, 1877 to October, 1880* (Nashville, 1880), *passim*; Felix J. Underwood and R. N. Whitfield, *Public Health and Medical Licensure in the State of Mississippi, 1798-1937* (Jackson: Tucker, 1938), pp. 42-43; Howard D. Kramer, "The germ theory and the early public health program in the United States," *Bull. Hist. Med.*, 1948, 22: 233-247.

<sup>78</sup> For a medical survey of yellow fever, prepared in 1898 on the eve of Reed's discoveries, see United States Public Health Service, *Yellow Fever*; the best of the many accounts of the Reed Commission is Kelly, *Walter Reed and Yellow Fever*.



cosmopolitan air. The Germans, few in number but influential, seem to have left the city almost entirely. The larger group of Irish, the white element that suffered the most from the epidemic, was never again a major political or cultural force. The white population became increasingly Southern, rural, and Protestant, while the proportion of Negroes to whites increased. Many of these changes were common to other Southern cities in the late nineteenth century, but the epidemic of 1878 undoubtedly accelerated them in Memphis.<sup>79</sup>

And one irony remains: in time, by the middle of the twentieth century, Memphis became a leading medical center, home of the University of Tennessee medical college, a large veterans' hospital, and several other private and public medical research facilities. The buildings that house these activities crowd together in what is now the center of town, shadowing a little park named for General Nathan Bedford Forrest, a hometown boy. Few who pass by on their way to the modern hospitals realize that peaceful Forrest Park, once the eastern edge of town, was the site of the City Hospital back when Memphis was the pesthole of the Mississippi, back in the great epidemic of 1878.

<sup>79</sup> See Capers, *Memphis*, pp. 204-209, for an elaboration of his thesis that a "new Memphis" arose after 1880; see also Tracy, "The immigrant population of Memphis," pp. 76-77, who feels that Capers slightly overstates his case.