1878 Yellow Fever Epidemic of Memphis: An Historical Case Study Analysis to Understand Rapid Epidemics with Little Known Knowledge

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Abstract

In light of the global impact of COVID-19 over the last two years, there is a significant advantage to revaluating disease through historical case study analysis of past epidemics. One epidemic worthy of historical analysis is the Yellow Fever Epidemic of 1878. At that time, Memphis was on track to rival St. Louis and Chicago economically. However, due to the epidemic, the population dwindled so dramatically that the city disbanded by 1879 when it lost its charter, thus becoming a taxing district of the State of Tennessee. This essay evaluates the rapid nature of the 1878 fever season as it impacted Memphis while detailing how the disease affected those that remained. This historical case study analysis aims to provide an understanding of quick onset epidemic events with limited knowledge available.

Keywords: Diseases, Epidemics, Historical Case Study Analysis, Medical History, Memphis, Public History, Social History, Yellow Fever

Epidemia de fiebre amarilla de 1878 en Memphis: un análisis de estudio de caso histórico para comprender las epidemias rápidas con poco conocimiento conocido

Resumen

A la luz del impacto global de COVID-19 en los últimos dos años, existe una ventaja significativa para revaluar la enfermedad a través del análisis de estudios de casos históricos de epidemias pasadas. Una epidemia digna de análisis histórico es la epidemia de fiebre amarilla de 1878. En ese momento, Memphis estaba en camino de rivalizar económicamente con St. Louis y Chicago. Sin embargo, debido a la epidemia, la población disminuyó tan dramáticamente

que la ciudad se disolvió en 1879 cuando perdió su estatuto, convirtiéndose así en un distrito fiscal del Estado de Tennessee. Este ensayo evalúa la naturaleza rápida de la temporada de fiebre de 1878 que afectó a Memphis y detalla cómo la enfermedad afectó a los que quedaron. Este análisis de estudio de caso histórico tiene como objetivo proporcionar una comprensión de los eventos epidémicos de inicio rápido con conocimiento limitado disponible.

Palabras clave: Enfermedades, Epidemias, Análisis de estudios de casos históricos, Historia médica, Memphis, Historia pública, Historia social, Fiebre amarilla

1878年孟菲斯黄热病：通过有限知识解读快速传播的流行病——一项历史案例研究分析

摘要

鉴于过去两年2019冠状病毒病（COVID-19）的全球影响，对以往流行病进行历史案例研究进而重新评价疾病一事是十分有益的。一个值得历史分析的流行病是1878年的黄热病。彼时，孟菲斯在经济上有望与圣路易斯和芝加哥匹敌。然而，受黄热病影响，孟菲斯人口急剧减少，以至于该市在1879年失去城市特许状，从而成为田纳西州的一个税收区。本文评价了1878年黄热病的快速传播性质（因为它影响了孟菲斯），同时详细说明了该疾病如何对幸存者造成影响。该历史案例研究分析旨在以有限的知识解读快速发生的流行病事件。

关键词：疾病，流行病，历史案例研究分析，病史，孟菲斯，公共史，社会史，黄热病

COVID-19 sustains the potential for resurgence as the pestilence mutates and new variants emerge in the foreseeable future [by definition, pestilence refers to a fatal epidemic disease, like the plague. But to my way of thinking there are very real differences between the plague and COVID.] The rapid spread and a massive loss of life has left a permanent mark on history. It will, without question, be studied and evaluated by many service areas through case-study methods blended with historical analysis (for example, business, education, government, and healthcare) as we

move further from the point of origin. Evaluating COVID-19 and its impact on society today, we can look to the past to understand what permanent effect an epidemic has on a community. One event worthy of re-evaluation through historical analysis is the 1878 Yellow Fever Epidemic, which upended the future of Memphis and left a permanent legacy after 1879. This essay does not compare COVID-19 and yellow fever, but uses historical analysis to describe an event in time where conditions were right for disease to spread, conceptual knowledge was not available on a cause, prevention, or treatment, and the impact on people living through the disease.

Throughout the 1800s, multiple yellow fever events visited Memphis (1828, 1836, 1855, 1866, 1867, 1873, 1876), varying in the scope and scale of impact. Current literature describes each event as a bout of sporadic cases to full-on epidemics. To provide perspective, in the epidemic of 1828, Memphis had a population of about 300, of which 40 were victims, thus considered an epidemic by proportion. However, in 1866, only a few sporadic cases were reported.[1] Before 1855, yellow fever outbreaks had not originated in Memphis; instead, the disease was brought to the city by sailors who contracted the disease while on boats traveling from New Orleans along the Mississippi River. These cases are medically documented as river-borne and referenced under different names. For example, bilious fever, bronze john, saffron scourge, or yellow jack are commonly used terms hinting at the coloring of victims' skin who succumbed to the pestilence as reported by early eyewitness accounts, and in medical depictions, and newspapers.[2]

By 1878, Memphis had established itself as a premier city in the South. A bustling economy based in the cotton trade earned Memphis a place in history as the cotton capital of the world and, with it, an extensive trade network along the Mississippi River. Memphis amassed a population that outpaced Nashville and Atlanta and rivaled New Orleans. However, the city became known for its political corruption, the establishment of pre-war race relations, and the deplorable sanitation situation city inhabitants endured.[3] In addition to economic accolades, the population of Memphis grew significantly from roughly 300 in 1828 to 40,000–50,000 in 1878. Despite an incredible growth rate, the 1873 Yellow Fever epidemic stalled population growth; fear of the disease's return every summer set in for city residents.[4]

The city's location along the Mississippi River made Memphis a natural crossroads splitting the country east from the west while connecting trade north and south. As time passed, railroads added their lines to the river network creating a transportation hub for the Southern market. Surrounding the city was a rural, agrarian society that baled cotton and brought it to Memphis to be transported to other destinations. Memphis became an inland cotton hub, processing roughly 360,000 bales per year during the height of the trade.[5] In 1873, an economic depression affected the entire nation; however, it significantly impacted Southern society,

which, at the time, was reeling from a war that destroyed its principal financial means—agriculture. The economic depression that year only added to the woes of Memphis as the population "swelled with an underclass" looking for employment, as jobs on farms became scarce.[6]

Memphis was diverse, particularly for an antebellum Southern city. A larger black population existed in the city before 1878 due to an active slave trade before the war. Furthermore, Union invasion and occupation during the war lasted into post-war years, also increasing the black population. A large fort in South Memphis, Ft. Pickering, housed up to 10,000 black troops; after the war, the area became the home a large Freedman's Bureau Camp, thus extending the black population in Memphis at the time to roughly 15,000, or 40% of the total population.[7] One historian suggests that the rest of the population was "a mixture of old-stock Southern whites, immigrant Irish—with a few Germans, French, Italians, and Chinese here and there."[8]

Memphis earned a reputation as a medical district in the 1860s and 1870s. As a medical district, the city had an extensive hospital network established by the U.S. government during the war for injured soldiers. For example, one hospital serviced up to 125 beds at any given time. The district infrastructure remained in the post-war years. Additionally, the uses of the hospital network established were helpful when other diseases like cholera and malaria also came to Memphis. Despite the successful reputation as a medical district in the South, cholera, malaria, and yellow fever made the city known for being "sickly."[9]

Progressive ideals provided a bright future for the city, yet Memphis was known for its filth. In 1878, Memphis did not have water management system in place, and thus relied on river water. As the population grew, water sources included collection barrels, cisterns, and prives. A lack of a water management system led to unsanitary conditions that plagued the city with raw sewage.[10] Furthermore, historian Thomas Baker described that condition in Memphis as having "little street paving, rotten wooden blocks, no adequate scavenger system for garbage or refuse, and few sewers for the tens of thousands of thousands of outdoor privies."[11] Additionally, the division between wealth and poverty was drawn in the social fabric of city residents. On the eve of the yellow fever outbreak of 1878, progressive leaders planned for Memphis to host events and celebrations such as Mardi Gras. By the time the first case of yellow fever appeared in 1878, there were 1,500 construction projects underway intended to thrust the city into its place rivaling cities like Chicago or St. Louis.[12] Despite all efforts of local politicians and business people looking for a re-birth of city imagery on a national scale, the epidemic of 1878 stopped them in their tracks.

Fear played a significant role in the lives of Memphians in 1878. Medical experts in Memphis created a community belief that Memphis was just north of the "yellow fever zone," suggesting that yellow fever could not be "generat-

ed" from within the city. Since nothing scientifically confirmed this was not the case, residents nursed those sick from steamboats from south of Memphis with a sense of relative safety for themselves. The 1855 yellow fever epidemic disproved expert opinions expressing "that yellow fever has never originated this high up the Mississippi, and that there were no causes in our locality for originating it."[13] Lack of knowledge about the origin of the disease was the cause of immense fear in the city's citizenry. At any rate, fear of yellow fever caused residents. In previous epidemics, there was reluctance and outright hesitation in acknowledging that yellow fever was present until it became blatantly obvious.

Additionally, the medical community in Memphis perpetuated an idea that blacks were likely immune to yellow fever because of their descendency as enslaved people from tropical climates.[14] Cases of yellow fever did not cause the extent of deaths within the black community as they did in other cultures, however. Therefore, as reports began swirling of yellow fever in the region a natural uneasiness set in among residents. One medical practitioner surviving the epidemic of 1878 suggested, "we know nothing about yellow fever; that is a law unto itself in its tenacity of life as well as in its inception, growth, and progress."[15]

By 1878 conditions for another yellow fever epidemic became a reality. While no one, medical expert or citizen, knew the cause, symptoms, or treatment of yellow fever, there were accurate observations from previous epidemics.[16] Two schools of thought divided the medical community in Memphis in 1878, however. One group of medical experts firmly believed that "filth" caused the disease, while the other group felt that rail and river movement was the culprit. At any rate, Memphis sustained a hot and humid climate. Historical research was done to look for a correlation with an El Nino in 1878 as a potential environmental factor that impacted Memphis.[17] The city's diverse population enhanced the risk of disease growth but was not transmitted from person to person; an urban environment only gave the female mosquitoes, *Ae. aegypti,* a host of victims to infect.[18] Unlike malaria, yellow fever thrives where people are numerous, versus stagnant water-laden rural locations. The primary condition for an explosive illness, of course, was the people factor.

Yellow fever arrived in the city by August 1878 via boat. Historians refer to the location as Happy Hollow, a small city section "below the bluff."[19] The first Memphis resident to succumb to the pestilence was Mrs. Bionda, wife of a snack-shop owner below the bluff, within the first couple of days of yellow fever coming to the city. Residents had already been in a state of nervousness as news reports had already indicated the madness was moving up the Mississippi River town by town.[20] One way to address the spread of yellow fever was the medical board's authorization of quarantines. These were regularly used to control the spread of other diseases throughout history. In April 1878,

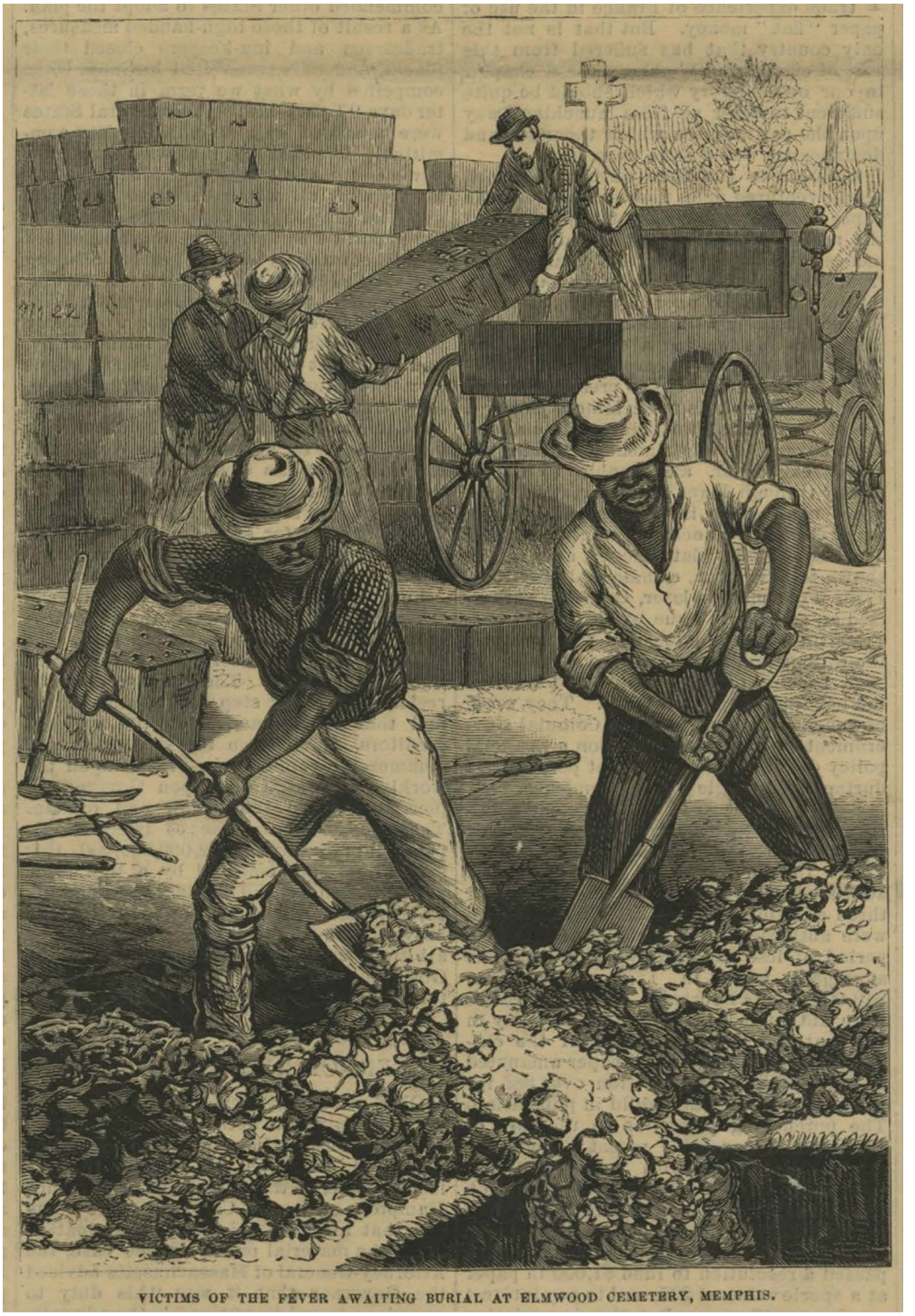
Congress passed the Quarantine Act, spelling out that quarantines could be localized. However, failure at the local level meant the U.S. government could use military operations to enforce the law.[21] However, the situation was dire by the time the first citizen contracted the disease. The local government and the Board of Health could do anything to stop yellow fever; thus, citizens were mainly on their own.[22]

Accounts were kept by those remaining in Memphis, such as John Keating, editor of the city's paper, *The Memphis Daily Appeal*. At the onset of the yellow fever exposure in 1878, Keating wrote, "Business was almost suddenly stopped as the fever began. Men, women, and children poured out of the city every possible avenue of escape whether it was carriage, buggy, wagon, anything that could float on the river and railway."[23] Within days of the first death being reported, *The Memphis Daily Appeal* published business closures and moves on the paper's front pages. Civic institutions and the municipal government began collapsing under the strain of the exodus of those employed by the city. Memphis' mayor, sheriff, police chief, health administrator, and congressman remained in the city and worked individually to sustain the government services; police and fire services were severely impacted by those who resigned or fled. It was determined that a third of the police force left—at the height of yellow fever there were only seven policemen fit for duty.[24] By September, when yellow fever reached peak exposure, companies were inclined to remove themselves from the city and move to neighboring towns.[25] Many who left in 1878 never returned, even after medical experts officially gave the all-clear that December; there were cases of families in Memphis and their loved ones outside the city, but yellow fever kept them from returning when needed. In one situation, a young businessman left his family behind in the town. When telegraphed for help, he sent some money and ordered coffins because there was no way of getting everyone out.[26]

The most prominent Memphians that stayed behind also felt the pain of loss, as did everyone else. Dr. B.W. Avent and John Erskine, both former Memphis Board of Health officers, joined the ranks of victims of the 1878 yellow fever, making the situation in Memphis a catastrophic medical event.[27] Keating depicts city streets lined with unburied bodies, some often there for days, and even describes in raw detail a dead infant sucking the breast of its dead mother.[28] Scenes of horror and smells of death were not an illusion to city residents as the onslaught of the disease was just settling into the bluff city.

Cemeteries dotted the landscape in 1878, but the largest recipients of yellow fever victims were Calvary, Potter's Field, and Elmwood cemeteries. Church and family plots built for private use by their congregations or families were available. The churchyard graveyard experienced a cultural revolution, and the trend at the time sent the departed out to locations away from city boundaries, thus offering a much more peaceful and serene landscape to visiting friends and

Sisters of Charity went door to door providing aid and comfort to the sick and dying during the yellow fever epidemic of 1878. Image originally published 20 September 1878. Illustration from Harper's Weekly Newspaper and Frank Leslie's Illustrated Newspaper. Digital Collection of the Memphis & Shelby County Room, MPLIC.



Victims of the Fever Awaiting Burial at Elmwood Cemetery, Memphis during the yellow fever epidemic of 1878. Image originally published 21 September 1878. Illustration from Harper's Weekly Newspaper and Frank Leslie's Illustrated Newspaper. Digital Collection of the Memphis & Shelby County Room, MPLIC.

family. Potter's Field never kept a record nor maintained headstones of yellow fever victims. Literature available suggests Potter's Fields can be found in several locations in early America. Historically these areas are the locations of indigent burials. Graves were unmarked, and no ritual ceremony was performed. Keating wrote, "wagons filled quickly with bodies thus, furniture wagons were turned into hearses to haul victims off to Potter's Field. At the rate of death has fallen upon Memphis, gravediggers were in high demand day and night. On one occasion, this army of diggers was noted as having dug well into the night "under the pale moonlight.""[29]

Elmwood Cemetery was a couple of miles outside of Memphis along a railway. This railway brought visitors to the cemetery to visit plots and served as a place for serene recreation.[30] Properties could be purchased for roughly fifteen dollars by wealthier citizens; second-class parcels were sold to blacks and poorer Memphians for a few dollars less. The real highlight was the headstone that marked graves, which could cost anywhere from two to seventy dollars.[31] There was strict adherence to internment from the Elmwood staff before the yellow fever epidemic. Elmwood maintained that a body could only be moved during the winter months or if the departed had been deceased for five years, a precautionary measure to ward off the risk of exposing another epidemic to the public.[32]

By August 17, 1878, the end of the first whole week of pestilence in the city, the Memphis Board of Health demanded deaths be reported quickly. However, the number of departed daily prevented the city undertaker, Jack Walsh, from getting the information quickly enough to health officials. Estimations of the number of yellow fever victims are problematic due to inaccuracies in medical reporting. Underestimation of people that physicians saw and the rapidness of infestation caused a failure to "report" accurate deaths.[33]

Additionally, city cemeteries faced problems with burial services from a lack of grave diggers preparing individual graves.[34] Before the fever set in, standard ritual procedures allowed more time to prepare a body for internment. During the 1878 fever, however, individual internment ended in many cases, and mass internment became the solution for officials and cemetery overseers. It was acknowledged that mass burials expedited getting the dead into the ground quicker, although it would shorten the mourning period for loved ones.

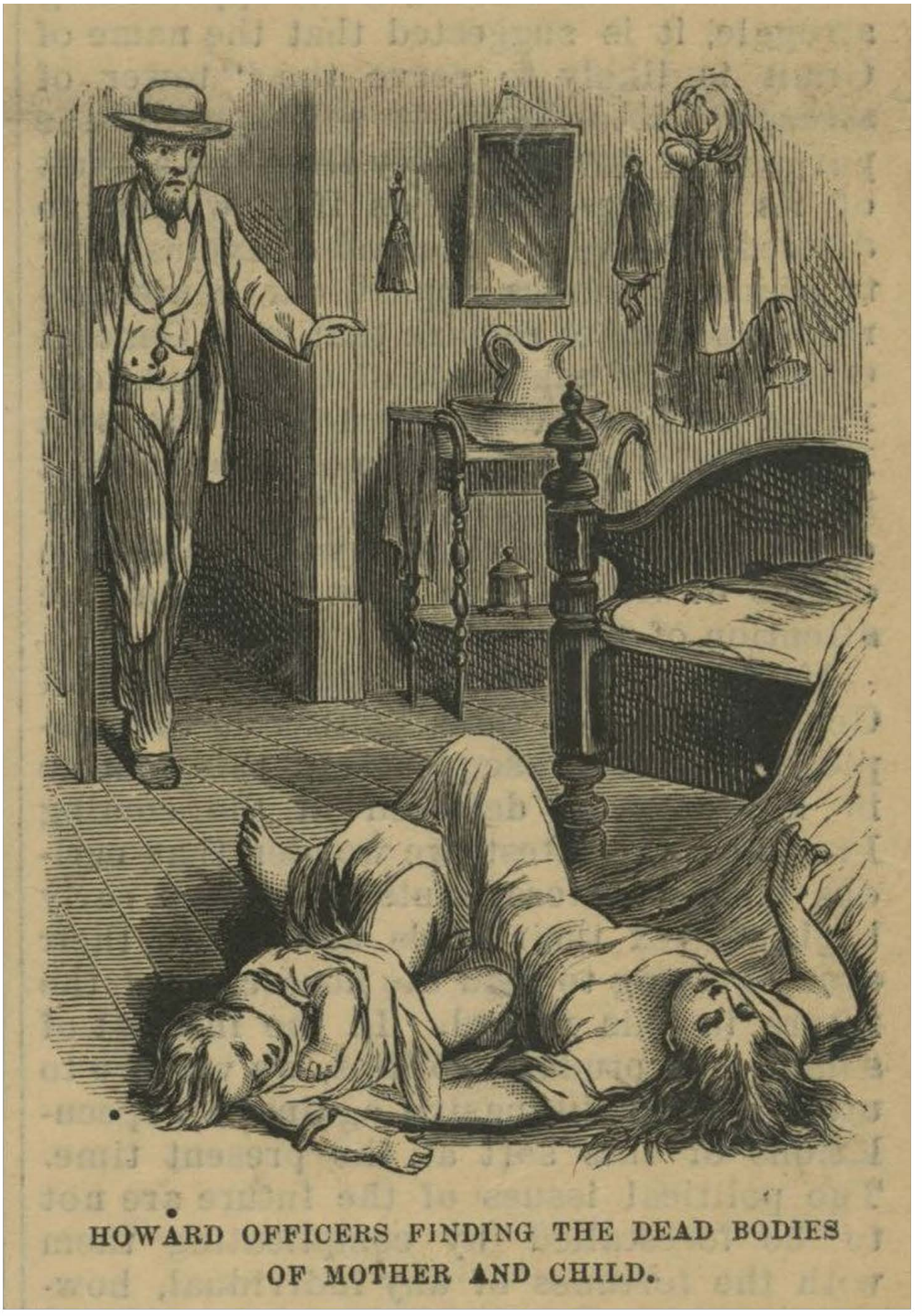
One case is the death and burial of Mrs. Calhoun. Mrs. Calhoun was married and had a son. Yellow fever consumed both Mrs. Calhoun and Mr. Calhoun. The husband was transported to the hospital while Mrs. Calhoun was left in the care of a nurse known as DePelchin. The child was sent off with a neighbor, and Mrs. Calhoun perished. "DePelchin clothed the corpse in a clean garment, and informed the police officers of the death. Three black men with the evening burial patrol removed the body by placing it in a "rough" coffin and transported her off to a ceme-

tery. DePelchin was disturbed by the idea that Mrs. Calhoun was buried by people she did not know, but the city was besieged, and there was not much of an option left."[35]

Death was such a common occurrence that residents found advertising for coffins replaced manufactured goods in *The Memphis Daily Appeal*.[36] The only persons moving throughout the city were those who volunteered for those in need. However, a rising number of sick and dead were on the street. The only vehicles were hearses and funeral carriages that were a part of the newly created burial patrol.[37] The Memphis Board of Health met to identify primary issues within city limits regarding public health and the city streets littered with corpses.

The panel decided on September 6, 1878, that the undertaker would not handle all aspects of processing the dead by himself. The Chief of Police was charged with processing death certificates and adding burial responsibility to police services; police officers were added to burial patrol duty.[38] Private organizations sprang into action to support those in need in the city. First, the Howard Association, active in 1855, 1867, and 1873 epidemics, established a Memphis chapter in 1867 to provide aid and comfort day and night for citizens.[39] When the city failed to respond to the yellow fever influx, the Howards were activated to serve the sick and dying. By the end of the epidemic, the Howards provided 111 doctors, of which 17 residents and 28 volunteers died, and 2,995 nurses came, many from the North, to aid the citizens of Memphis.[40] The second organization was the Citizens' Relief Committee, or CRC, became an extension to municipal services. The CRC granted aid to the city undertaker, Mr. Walsh, with burials, since morbid scenes were being reported of bodies found in homes, decaying, and on the street, rotting. The Chief of Police was given permission to shadow Mr. Walsh with the assistance of patrols. This prompted haste in his work as an undertaker.[41]

On September 14, 1878, a report listed the names of 200 people who died, marking the day as one of the deadliest in the city's yellow fever history. The undertaker, Jack Walsh, was responsible for burying "pauper" residents of the city and county, but many of the 2,500 people he buried within the first months of the epidemic were not paupers—they were simply unclaimed or had no family left.[42] Furthermore, the city's undertaker was embroiled in controversy when it became known he and his employees, about 130, engaged in storing bodies in a stable to take by wagon loads to Potter's Field and other locations. He explained to officials that he could not keep up with the rate of death even with the assistance of the Chief of Police and his men. Additionally, despite the dire situation of burials, the undertaker would not pay black men money to handle the corpses of the recently departed. Interestingly, the city undertaker was arrested and afterwards, members of the black community received fair wages for assisting in the retrieval and disposal of bodies.



Howard Officers Finding the Dead Bodies of Mother and Child. Memphis during the Yellow Fever Epidemic of 1878. Image originally published 21 September 1878. Illustration from Harper's Weekly Newspaper and Frank Leslie's Illustrated Newspaper. Digital Collection of the Memphis & Shelby County Room, MPLIC.

Walsh died after contracting yellow fever that year himself.[43] The CRC patrolled, scoured the street, smelled for death, and even watched vultures looking for corpses. The Committee paid men five dollars for every adult corpse and three dollars for a child they retrieved and hauled off for burial.[44] No processions occurred during the fever months, just a wagon load of wooden coffins beginning to get stacked relatively high due to deaths. For the longest time, sanitary conditions in Memphis ranked it among the worst cities in the nation. Yellow fever gave people reason to believe that hygienic conditions were causal for yellow fever to strike as hard as it did in that city. The final private organization to spring into acts of charity were the Catholic churches of in Memphis.

At Elmwood Cemetery, the standard burial ritual process ceased because people were dying so rapidly that coffins layed in wait to be placed into the ground. Keating responded in *The Memphis Daily Appeal* by calling attention to the scarcity of gravediggers resulted in four mass plots being dug in a section known as "No Man's Land" today. However, the height of the yellow fever season, especially in 1878, left no time, or trained personnel, to prepare a body, formal wakes, tolling of the church bell, procession rituals, and in many of the departed cases, no individual graves.[45] Those that could afford single plots paid for them. However, many of those remaining in Memphis were poor Irish immigrants and blacks, leaving many without the option to send their loved ones off into eternity properly.

Furthermore, wholesale burials, or mass plots, took away from the grieving process for many because there was a quickened sense of getting the departed into the ground, and the grieving period was altered due to public safety.[46] One insensitive situation that played out at Elmwood was the departure of the late Mrs. Pullen.

> The black gravediggers that happened to be burying Mrs. Pullen were notified to stop at six in the evening; otherwise, they would not be paid. The family was there for the service, so they kept on digging her grave. When the white supervisor returned to where the men were digging, he demanded that they ceased all activity and informed them that no work would ever be done at six, "no matter how many dead carcasses are brought here."[47]

Herbert Landrum expressed that death in Memphis from September to October was a wholesale burial business.[48] Those who were buried in individual graves at Elmwood were interred using hasty cemetery standards, including depth of burial plots. Furthermore, during the yellow fever months at Elmwood, graves were as shallow as sixteen inches below the surface in order to keep up with the number of dead.[49] Many who stayed to assist with the ailing and dying, such as members of the Howard Association and St. Mary's nuns, also contracted the fever and starved themselves. Those individuals were sent off into the afterlife through individual burial, and they are even memorialized with a monument.

Other members of Memphis society are still buried in single plots, such as Jefferson Davis, Jr., son of former Confederate President Jefferson Davis, who died of the mosquitoes in Memphis; fifteen people attended his funeral, and he was later sent off to Virginia for re-interment.[50]

By December of 1878, Memphis health officials formally announced fever season had subsided, and those who left the city returned to re-establish rituals forgotten due to the death rate that year. Upon return, however, citizens were taken aback by the lack of individual graves at cemeteries across the city. At Elmwood, residents paid for individual plots; they faced the reality their loved ones were buried in a mass grave. Furthermore, it must be mentioned that the original staff of Elmwood Cemetery was exposed and died of the fever, or they left with the exodus. New staff members did not maintain an accurate record of yellow fever burials, which left people wandering the cemetery with graveside gifts, but no plots identified them.[51] In the ledger book kept by the cemetery, the names were recorded, in addition to the cause of death, but in some locations throughout the ledger, there is confusion. As a result, confusion by those returning turned to anger due to cemetery procedures of handling the internment; the cemetery announced that bodies could be disinterred and relocated within two months.[52]

Yellow fever impacted more than the medical field in Memphis. The behavior of citizens in the city produced a moral scandal in the eyes of many. Social structures were strained by the weight of resentment between those who left and those who stayed behind. One case surrounded John Donovan, an Irish politician. Donovan was returning to Memphis when the fever gripped the town. His wife was pregnant, but Donovan did not re-enter the city due to the outbreak. Furthermore, his wife gave birth to a stillborn, and she later died due to the disease. From a distant location, Donovan sent burial instructions for the bodies of his wife and child. He then had his remaining children reunited with him in Nashville.[53]

Other instances occurred where men left their wives and children who were stricken with the fever. On one such occasion, a man watched the removal of his wife and child's body from a neighbor's home and loaded into a burial cart.[54] Additionally, race remained an issue in the Southern city as well. The tension between black and white was captured in a *Washington Post* letter, in which Dr. Ramsey libeled the character of black nurses supporting the citizens of Memphis. Dr. Ramsey suggested that he was informed that under the strain of yellow fever, black male nurses were left to care for white people and, in their condition, took advantage of them; a swift response to express what Dr. Ramsey was informed of was gross libel from *The Memphis Appeal* sending a rebuttal that "no man, white or black, guilty of it, could breath a second here after the perpetration of such a crime had been committed; that the colored people of Memphis in mass have been as loyal to duty as the whites…."[55]

In the aftermath of the epidemic, Memphis gave up its charter due to the debts incurred, and it became a taxing district for the state. Whatever reputation was planned by city leaders to be a rival industrial and commercial center for the South was dismantled in the wake of 1878. Of 40,000 people present at the onset of the outbreak in August, 25,000 fled, and only 16,110 people were recorded in July 1879.[56] In Memphis, despite the issues that the epidemic caused, new legacies were created for those who stayed and survived it. In the wake of the epidemic, cultural roles took on a whole new part in city life during the epidemic and its path. For example, during the epidemic, the first black police officers were hired to enforce city ordinances and laws in the absence of those that were stricken or fled the city. Even in the darkest hours of the yellow fever epidemic, there was light in the fondness of brotherly compassion in a city that needed it the most. From a plague that harvested death, the city came together to strive for survival.

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19 Baker, 241.

20 Baker, 244; New Orleans first reported yellow fever and the city of Grenada, Mississippi reported that yellow fever arrived.

21 Crosby, 41.

22 Evans, 12.

23 Keating, 10.

24 Baker, 250.

25 *Memphis Daily Appeal*, September, 11 1878, accessed 15 June 2022, http://chroniclingamerica.loc.gov/lccn/sn83045160/1878-09-11/ed-1/seq-1/.

26 Keith, 85.

27 Mildred Hicks, Ed. *Yellow Fever and the Board of Health—Memphis,1878.* (Memphis: Memphis and Shelby County Health Department, 1964), 37.

28 Keith, 16.

29 Keating, 107.

30 Crosby, 21.

31 Crosby, 56.

32 Crosby, 56.

33 Keith, 86.

34 Hicks, 21.

35 Keith, 155.

36 *Memphis Daily Appeal*, 11-15 September 1878, accessed 26 September 2013, http://chroniclingamerica.loc.gov/lccn/sn83045160/1878-09-14/ed-1/seq-1/.

37 Crosby, 21.

38 Crosby, 37.

39 Bruesch, 301; Evans, 12.

40 Bruesch, 305.

41 Crosby, 21.

42 Baker, 250.

43 Crosby, 55-56.

44 Crosby, 56.

45 Keith, 156.

46 Keith, 157.

47 Keith, 157.

48 Crosby, 105.

49 Crosby, 56.

50 Crosby, 71.

51 Keith, 174.

52 Crosby, 72.

53 Crosby, 85.

54 Crosby, 85.

55 *Memphis Daily Appeal*, September, 11 1878, accessed 15 June 2022, http://chroniclingamerica.loc.gov/lccn/sn83045160/1878-09-11/ed-1/seq-1/.

56 Bruesch, 305.