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# MEDICINE AND HEALING IN THE AGE OF SLAVERY

EDITED BY

SEAN MOREY SMITH &  
CHRISTOPHER D. E. WILLOUGHBY

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## FOREWORD

In 1991, I offered the first course in the United States on the history of race, American medicine, and public health. It had and continues to have a specific focus on African Americans. One of my teaching goals is to trace the historical roots of contemporary racial and ethnic inequities in health and health care. I begin each semester discussing, within a historical perspective, a current health challenge facing the Black community, such as its disproportionately high infant and maternal mortality rates. Another introductory topic has been racial inequities in pain care. Several studies have demonstrated that African Americans receive less pain medication than whites, even for the same conditions and injuries, such as appendicitis and joint dislocations. As part of this class, the students read a 2016 study that found that medical students and residents held false beliefs about the biological differences between Black and white patients. For example, they thought that Blacks were more immune to pain because they had thicker skins and less sensitive nerve endings. The researchers also demonstrated that these false beliefs were associated with inadequate pain treatment recommendations for Black patients. Students are usually shocked by these findings and appalled that today's medical trainees could hold such views. When they ask the origin of these theories, I respond, "We need to begin with slavery."

Almost thirty years after I first began teaching this course, I attended a groundbreaking conference on the history of slavery, medicine, and healing organized by Sean Morey Smith and Christopher D. E. Willoughby, the editors of this volume. Held in February 2018 at Rice University, the gathering was the first conference devoted to the topic. What immediately impressed me was that two junior scholars had the vision, passion, and ambition to create an intellectual forum for an international and interdisciplinary group of scholars to examine and critique the historiography of the field, exchange ideas, develop networks, and discuss new directions in research. Most of the essays in *Medicine and Healing in the Age of Slavery* are based on research that was presented at the Rice University conference. They demonstrate the evolution of the field, signal

RANA A. HOGARTH

50. August 16, 1793, *City Gazette and Daily Advertiser*.

51. Emma Hart and Trevor Burnard, "Kingston, Jamaica, and Charleston, South Carolina: A New Look at Comparative Urbanization in Plantation Colonial British America," *Journal of Urban History* 39, no. 2 (2013): 214–34, quote on 224.

52. Slaves viewed white practitioners' medical interventions, many of which involved purges, pukes, or bloodletting, as unpleasant, even punitive. Fett, *Working Cures*, 150.

## FROM SKIN TO BLOOD

*Interpreting Racial Immunity to Yellow Fever*

TIMOTHY JAMES LOCKLEY

Of all the exotic diseases Europeans encountered as they ventured into the tropics, by far the most confusing was yellow fever. It seemed to be simultaneously highly infectious, since epidemics could sweep rapidly through a community carrying off a significant percentage of the sick, and nontransmissible, as those nursing the sick could sometimes emerge completely unscathed from daily intimate contact. Even more curiously, yellow fever did not act uniformly and seemed to discriminate between individuals. Women seemed less vulnerable than men, and children were barely affected at all. West Indian physicians also quickly noticed that the disease "most commonly seizes strangers, especially those who come from a colder, or more temperate climate."<sup>1</sup> By contrast, "Native white men of the islands are seldom affected" or, at the very least, they seemed to be "much less obnoxious to it." This seemed to categorize yellow fever as one of the seasoning fevers that was widely accepted to be necessary as the body adjusted to a new tropical climate.<sup>2</sup> But the immunity of creole whites was not thought to be absolute. Hugh Smythson, in his popular medical encyclopedia, reported that natives leaving the tropics for any period became vulnerable to yellow fever on their return, while white men engaging in "debauches or violent exercise" risked becoming ill regardless of their nativity. Medical writers also deployed race in attempts to make sense of yellow fever. Whites of all types certainly seemed to be less immune than Black people. "None of whom," Smythson claimed, "of either sex, natives or foreigners, are ever known to be attacked by it."<sup>3</sup> Despite a shared faith in this observation, physicians and surgeons wrestled with defining what exactly protected Black people from the fever. Henry Warren in Barbados was among many medically trained people who struggled to explain how "the negroes, whose food is mostly rancid fish or flesh, nay often the flesh of dogs, cats, asses, horses, rats etc who mostly lead very intemperate lives, and who are always worse clad, and most exposed to surfeits, heats, colds, and all the injuries of the



air, are so little subject to this danger?"<sup>4</sup> This essay explores how contemporary physicians understood and interpreted the perceived vulnerability of Europeans, and comparative immunity of Africans, to yellow fever. It argues that medical explanations of racial immunity to yellow fever fit changing cultural perceptions of race. Specifically, explanations of immunity followed trends in downplaying place of origin and outward appearance as key racial markers in favor of presumed innate internal differences: blood replaced skin as the prevailing explanation for racial immunity.

The medical explanation for the selective impact of yellow fever is largely straightforward. People who survive yellow fever gain a lifelong immunity from future infections, but the immunity is not inherited across generations. Some scholars note that yellow fever was endemic in West Africa, a zone effectively bounded by the Sahara Desert in the north and the Kalahari Desert in the south, and it might have generally manifested itself as a comparatively mild childhood disease.<sup>5</sup> Native West Africans therefore usually acquired immunity from childhood infections, and they retained that immunity if enslaved and transported to the Caribbean. Children of any race born in the Americas (whether enslaved or not) might also have been infected with yellow fever during infancy, since the virus was certainly present in the Americas if not continuously then at least fairly frequently throughout the eighteenth century. Children infected in the Americas therefore also would have gained immunity.<sup>6</sup> Acquired immunity explains the immunity of both creole whites and enslaved Africans from a modern perspective. However, physicians and race theorists in the eighteenth and nineteenth centuries preferred to associate immunity with race rather than place of origin or residency.

Historians have argued, rather tetchily at times, over whether people of African descent also had some innate resistance in addition to this acquired immunity to yellow fever.<sup>7</sup> As Rana Hogarth has pointed out, acquired immunity could easily be interpreted as being innate by medical practitioners because they did not recognize the relatively mild childhood illness as yellow fever.<sup>8</sup> Still, many contemporary physicians were sure that Black immunity did exist, at least to some degree. And they used the concept of racial immunity to structure their own empirical observations. John Lining, describing the Charleston epidemic of 1748, "never knew one instance of this fever amongst them" and fellow South Carolinian David Ramsey observed that "The yellow fever falls almost exclusively on the

whites."<sup>9</sup> Many Caribbean-based physicians agreed. Robert Jackson, who served in Jamaica and eventually rose to be Inspector of Army Hospitals, attributed a role to nativity, reporting that "it has never been observed that a negro, immediately from the coast of Africa, has been attacked with this disease."<sup>10</sup> But for William Wright, who served firstly in Jamaica and then as director of military hospitals in Barbados, nativity seemingly played no part and he simply noted that "people of colour, and negroes, are in a manner totally exempt from this disease." He could proffer no plausible explanation for this—"that field negroes should not be liable to it is to me inexplicable."<sup>11</sup> William Pym, serving with the 70th regiment in Martinique, was equally bemused as to its selectivity and was unable to proffer a reason "Why it should attack whites in preference to blacks? Why it should prefer a robust European to a languid Creole?"<sup>12</sup> These questions would tax some of the finest medical minds of the era.

At the end of the eighteenth and the beginning of nineteenth centuries, the physicians who expended the most energy exploring racial immunity to yellow fever were attached to the British Army. As Mark Harrison has observed, physicians based in the West Indies, many of whom had associations with the military, "had an important bearing upon the development of ideas about race and susceptibility to disease."<sup>13</sup> Matters came to a head after 1793. British military plans to conquer French West Indian territories were thrown into complete disarray by yellow fever imported from West Africa by the ship *Hankey*.<sup>14</sup> It quickly became clear that those who claimed a complete racial immunity had gone too far since this virulent strain of yellow fever clearly did not exempt Black people entirely. In Dominica, James Clark noted that while "the negroes who had been long in the town, or on the island escaped . . . the new negroes who had been lately imported from the coast of Africa, were all attacked by it. I knew a lot of twenty-four fine healthy new negroes all seized with this fever about the same time, one third of whom died in the course of the disease."<sup>15</sup> In Martinique, "Every person of colour, black as well as mulatto, seemed to suffer from fever," while in Guadeloupe the fever "was violently contagious, and very few escaped it; even the negroes, who have been considered very unsusceptible of fever, were attacked with it."<sup>16</sup>

Other reports troubled simple assumptions of blanket racial immunity. Observing the epidemic unfolding in Grenada in 1793, Colin Chisholm offered a more nuanced view that ultimately still stressed the importance of racial categories: "It is curious, and may be useful, to observe the gradation of this fatal malady, with respect to the various descriptions of people exposed to its infection. Neither



age nor sex were exempted from its attack; but some were more obnoxious to it than others, and the colour had evidently much influence in determining its violence." But Chisholm recognized that Black immunity was relative not absolute. He recorded that when "the disease began to appear among the negroes of the estates in the neighbourhood of town . . . [it] did not spread much among them, nor was it marked with the fatality which attended it when it appeared among the whites." He estimated "that only about one in four was seized with it; and the proportion of its mortality was still more trifling, viz, one to 83."<sup>17</sup> Europeans, who were far less likely to have acquired immunity, suffered acutely during this epidemic with mortality rates upward of 30 percent.<sup>18</sup> Chisholm rated the most vulnerable to be sailors and soldiers, especially those "least accustomed to the climate" or "lately from Europe"; then white civilians, with those "lately arrived" most likely to fall sick; followed by mixed-race people, Black people, and finally children "especially those of colour."<sup>19</sup> Interestingly, Chisholm made no mention of the role that nativity or seasoning might have had on Black people, and he clearly thought that even seasoned whites were more vulnerable to this disease than any Black person. And the darker the skin, the more protection was afforded since he listed mulattoes as more susceptible than Black people.

British Army statistics made a clear case for contemporary physicians about the comparative immunity of Black people to yellow fever and the direct correlation between yellow fever and declining numbers of European troops. In 1794, the 9th regiment in St. Kitts lost 118 men, the 13th regiment in Jamaica lost 136 men, and the 66th regiment in Saint-Domingue lost 249 men. The 69th regiment lost 313 men within six months of arriving in Saint-Domingue in 1795. These were exceptional losses, far above the usual mortality in the West Indies, which just a few years previously had been estimated at about 10 percent per year.<sup>20</sup> The 9th regiment, for instance, had lost only seventeen men in the six years between 1787 and 1793 and would have been considered a "seasoned" regiment able to withstand a tropical climate.

The British military built assumptions of racial immunity into their plans for the West Indies. With the French freeing and then arming their former slaves against the British, General John Vaughan, commanding in the Windward and Leeward Islands, rapidly concluded "that a corps of one thousand men, composed of blacks and mulattoes, and commanded by British Officers would render more essential service in the country, than treble the number of Europeans who are unaccustomed to the climate."<sup>21</sup> After a slight prevarication in London, authoriza-

tion was given for the formation of the West India Regiments, intended "to be in every respect on the same footing as the marching reg[imen]ts of inf[antry] on the British estab[lishmen]t."<sup>22</sup> With West Indian planters totally opposed to providing men for this venture, army recruiters enlisted men from captured French or Dutch islands, poached the crews of East India Company ships, and trawled Chatham docks in England for emigrant West Indians or Black Americans.<sup>23</sup> Ultimately, however, the army was forced to purchase African men directly from slave ships.<sup>24</sup> The one thing that the vast majority of those enlisted shared was black, or at least dark, skin. Nativity was irrelevant. Nonwhites from the West Indies, North America, Africa, and even India were all thought to be sufficiently resistant to the yellow fever that continued to cut swathes through European regiments. Data collated by the army proved the need for this change. In 1796, 34.6 percent of the more than twenty thousand British soldiers in the West Indies perished, nearly all from disease. In the same year, and serving in the same locations, only 3.1 percent of those serving in the West India Regiments died.<sup>25</sup>

Army commanders in the West Indies did not expend too much mental energy considering why those of African descent seemed to be immune to yellow fever. It sufficed that they simply were. Indeed, most civilian physicians who had noticed that Black people in the Americas were affected far less by yellow fever than Europeans offered little in the way of possible explanations. John Lining in eighteenth-century Charleston attributed the difference to "something very singular in the constitution of the Negroes, which renders them not liable to this fever," but didn't speculate as to what that "singular" thing might actually be.<sup>26</sup> Charles White, writing in 1799, believed that there must be "original differences in the constitutions of the white Europeans, the negroes, and the Indians" that explained the exemption of Black people from the effects of yellow fever. Like Lining, he chose not to speculate as to what precise form those "original differences" might have taken.<sup>27</sup> A quarter-century later, Philip Tidyman could offer no real intellectual advance, opining, somewhat limply, that "Nature has, with a special regard to the safety of the blacks, rendered them almost proof against the insidious attacks of this terrible disease."<sup>28</sup>

British Army physicians were some of the first to offer possible explanations for racial immunity to yellow fever. Those who had served alongside the West India Regiments took the initiative because they had observed first-hand white soldiers succumbing to a disease that they did not observe affecting Black soldiers, even when sharing the same barracks, eating the same food, and wearing the



same uniform. Scottish physician William Fergusson spent more time than most considering racial immunity to yellow fever. Born in Ayr in 1773, he joined the army in 1794, serving first on the continent before being posted with the 67th Regiment to Saint-Domingue in 1796.<sup>29</sup> The British campaign, in partnership with French royalist planters, to seize Saint-Domingue was a complete disaster. David Geggus has estimated that more than 12,000 British soldiers perished in the five years of the Saint-Domingue campaign.<sup>30</sup> The principal cause was yellow fever, not military defeat. Soldiers stationed in Port-au-Prince “dropt like the leaves in autumn” and all this “without a contest with any other enemy than sickness.”<sup>31</sup> Fergusson remained in Saint-Domingue until the British left in 1798, observing for himself the stark contrast between European regiments and the informal Black militias that formed the bulk of the forces under British control in Saint-Domingue. In July 1796, for example, only 224 of 3,491 Black soldiers reported sick.<sup>32</sup> The consensus of medical professionals in Saint-Domingue was that the only possible path to victory against those native to the island was “by an army of negroes, . . . led on by such a proportion of European troops as might animate and encourage them.” Hector M’Lean, assistant inspector of hospitals in Saint-Domingue, believed that the embodiment of Black soldiers as regular troops would “more effectually . . . diminish the mortality of British soldiers in St. Domingo . . . than all the medical exertions of the most experienced and skillful physicians.”<sup>33</sup>

After a period of service in Europe during the Peninsular War, Fergusson returned to the West Indies as Inspector of Hospitals between 1815 and 1817. As the army’s Principal Medical Officer in the Windward and Leeward Islands, Fergusson naturally turned his attention to the soldier’s scourge: yellow fever. While mortality had lessened somewhat from its peak in the 1790s, yellow fever remained present in the West Indies, and Fergusson embarked on a lengthy tour in order to complete a “topographical health survey of all the West India colonies.”<sup>34</sup> The data he collected, augmented by his personal observations of the Black soldiers of the West India Regiments in Barbados, formed the basis of several publications on yellow fever.<sup>35</sup>

Fergusson’s belief in racial immunity led him to search for its cause, which he eventually decided was in the skin. Fergusson was convinced that “yellow fever cannot be contagious” in part because “the coloured races, whatever may be their exposure to the supposed infection never take it.”<sup>36</sup> Attributing instead the spread of the disease to something he termed “marsh poison,” he repeatedly asserted

that “the negro is incapable of being affected with yellow fever” and that Black soldiers had proved themselves on several occasions to be “fever-proof,” able to occupy barracks and forts that had proven deadly to European troops.<sup>37</sup> As to why this was the case, Fergusson decided that the most obvious explanation was that black skin had special resistive qualities. After all, the army had recruited Black soldiers from all over the Atlantic World, and they seemed to share a resistance to the disease. Unlike delicate white skin, black skin was, he thought, “thick, oily, and rank, to a great degree.”<sup>38</sup> When considering how the “marsh poison” could possibly enter the body, whether inhaled, eaten, or via touch, the known immunity of those with black skin pointed in only one direction. The thicker skin that Fergusson decided Black people possessed must protect them from this disease, so much so that “marshy savannahs . . . prove to him the most healthful abode.” And this perceived thicker skin protected owners from more than disease. The rays of the hot tropical sun, “which so certainly strike down the unprotected European, dart harmlessly upon his woolly head and spongy cancellated cranium; nor do they blister his thick unctuous skin, however long he may be exposed to them.”<sup>39</sup>

Fergusson was not the first to argue that Africans had thicker skin than Europeans, but he went further by connecting that idea to yellow fever immunity. Dr. Charles White, writing in 1799, thought “the skin, including the epidermis and rete muscosum, is well known to be thicker in the African than in the Europeans.”<sup>40</sup> It was this same attribute that meant “he is much better adapted to bear the effects of extreme heat and exposure to the solar rays of a tropical climate than Europeans are.” Indeed, one British Army surgeon believed that such was the “greater density and toughness” of this layer of skin that it was “often sufficient to turn the front of a lancet.”<sup>41</sup> Some military surgeons thought that this perceived thicker skin also helped Black soldiers recover from battlefield wounds. George Pinckard served as a medical officer with General Abercromby’s expedition against Saint-Domingue in 1796–97. Amidst his generally gloomy observations on the disastrous campaign, he noted the rapid recovery of wounded Black soldiers compared with that of their white counterparts:

The distress occasioned by [wounds and ulcers] is wholly confined to the Europeans; for, while the soldiers from England continue to suffer dreadfully from their sores, the wounds of the Africans, who are lying in the adjoining beds of the same wards, heal with surprising rapidity, and



are completely cured. Indeed the recovery from sores and ulcers in this climate is as peculiarly successful among the blacks, as it is the reverse among the Europeans.<sup>42</sup>

But Fergusson was the first physician to posit a link between supposed thicker skin and yellow fever immunity, and his work circulated widely, proving particularly influential among fellow army surgeons.<sup>43</sup> Reporting on a yellow fever epidemic in Guiana that had seen a 13 percent white mortality rate but less than 1 percent among Black inhabitants, Surgeon General Daniel Blair noted that “complexion was paramount” and stressed the importance of “cutaneous organisation on the liability to yellow fever among the population of the colony.” While he doesn’t mention the thickness of skin per se, Blair clearly concurred with Fergusson’s larger sentiment about “the importance of the skin” in protecting those of African descent.<sup>44</sup>

Fergusson had fixed racial immunity to yellow fever into black skin. In his view it was not reliant on nativity or seasoning. For army physicians working in the West Indies in the first half of the nineteenth century it quickly became a trope that Black people on average possessed greater immunity to yellow fever than all white people, regardless of the fact that there were obvious instances of yellow fever impacting some Black people and exempting some white people. Many accepted that supposedly thicker black skin was the reason for this difference and therefore it was possessed innately both by native Africans as well as by those born in the West Indies or in North America. Fergusson’s argument was even picked up by Charles Darwin who, after reading it, mused whether the immunity of Black people to tropical fevers might be “something to do with the skin’s texture” and if “the ideosyncrasy of the Negro (& partly mulatto) prevents his taking any form of Malaria” then naturalists might consider this to be an “adaptation & Species-like.” Ultimately, however, Darwin’s own most significant publications *On the Origin of Species* (1859) and *The Descent of Man* (1871) determined that it was not “species-like” at all but a result of evolution through natural selection.<sup>45</sup>

This belief in the importance of black skin as a defense against yellow fever came under pressure by the middle of the nineteenth century. Josiah Nott, a doctor residing in Mobile, Alabama, had personally witnessed the impact of several yellow fever epidemics in the city. As the population of the city grew, so did the death toll, rising from approximately 450 in the 1839 epidemic to more than a thousand in 1853. Mobile’s epidemics often coincided with outbreaks in

nearby New Orleans as the two ports were well connected by ship. Nott was perfectly aware from his own observations that yellow fever was a discriminating disease, attacking certain residents while leaving others untouched. The most significant factor, he insisted, was not residency (though he surely would have known that whites born in the city were generally exempt) but race: “During the severe epidemics of yellow fever in Mobile in the years 1837, ’39 and ’42 I did not see a single individual attacked with this disease, who was in the remotest degree allied to the Negro race.”<sup>46</sup>

The innate protection Nott perceived among Black people was something that he thought must be contained in “negro blood” which functioned as “an antidote against yellow fever for the smallest admixture of it with the white will protect against this disease.”<sup>47</sup> Skin tones were not as important to Nott as what lay inside the body. He claimed that “a mulatto, from the healthy parts of Virginia or Maryland, however small may be the proportion of Negro blood, will come to Mobile in mid-summer, and face yellow fever with impunity.”<sup>48</sup> Such a claim was nonsense of course. Anyone, of whatever skin tone or ethnic background who had never experienced yellow fever before, arriving in Mobile during an epidemic year, would become infected. But Nott’s influence as a writer about yellow fever should not be dismissed. Nott came closer than most physicians to discovering that yellow fever is transmitted by mosquitoes. His 1848 article “Yellow Fever Contrasted with Bilious Fever” was based on the hypothesis that “some form of insect life” was responsible, pointing to the fact that a killing frost, known to stop yellow fever in its tracks, would destroy “insects and their eggs” but have little effect on “miasmas” or other popular explanations for the disease. He even specifically mentioned “some insect or animalcule, hatched in the lowlands, like the musquito” as a possible agent.<sup>49</sup>

Nott was, of course, not the first to link blood and race. As Winthrop Jordan has pointed out, blood had been seen as containing the “essence of man” since the origins of the western medical tradition in ancient Greece and mulattoes were sometimes seen as being a product of the “mixing of bloods,” implying that two distinct things were being mixed together.<sup>50</sup> Throughout the Atlantic World blood was privileged “as a material and symbolic conduit through which parents transmitted inherited qualities of character, mind and temperament,” with the obvious intention that those of “pure” white blood were superior to those with “tainted” Black blood.<sup>51</sup> The social importance of different bloodlines was immense, but physicians who actually studied white and Black blood came to radically differing



conclusions. James Thomson in Jamaica had “repeatedly analysed the blood” of white and Black people, both healthy and sick, and declared he “could not detect the least variation.”<sup>52</sup> William Wright, treating white and Black patients in Saint-Domingue, by contrast, claimed there was a significant difference between the blood of sick Black people, “generally firm and often buffy,” and that of sick white people, “loose, discoloured and watery.” It was clearly sufficiently different, he thought, to affect susceptibility to illnesses.<sup>53</sup>

Why did Nott shift the emphasis regarding yellow fever immunity from skin to blood? In part it was because the American South contained a large, and increasing, mixed-race population. Nott published a number of articles about mulattoes describing them as a “hybrid” species that were noticeably less fertile than either parent, though, as John Bachman pointed out at the time, the rapid growth of the mixed-race population tended to undermine his claims.<sup>54</sup> The looming disappearance of a clear visual distinction between whites and nonwhites fundamentally threatened slavery. Although Nott himself claimed to be able to detect those “tainted with negro blood . . . without difficulty,” even eight or nine generations removed, other people evidently found it far harder.<sup>55</sup> Since there were now some very light-skinned enslaved people, the claim that the special qualities of black skin were, of themselves, sufficient to endow disease resistance seemed implausible. Fixing yellow fever immunity in blood allowed Nott to reduce the social importance of skin tone.

The only time Nott ever showed an iota of doubt about racial immunity was in the immediate aftermath of the 1853 Mobile epidemic that claimed more than a thousand lives, including several of Nott’s own children. Describing the course of the epidemic for readers of the *New Orleans Medical and Surgical Journal*, Nott related that “About fifty of the deaths from Yellow Fever were among the colored population, and this class was almost as universally attacked as the whites, which shows a degree of malignity unknown in Mobile since 1819.”<sup>56</sup> Nott turned evidence of Black people’s susceptibility to yellow fever into a claim that the outbreak in Mobile was more virulent than usual, and his *Types of Mankind* published in 1854 repeated the claim that immunity to tropical illnesses was conferred by even a “small trace of negro blood.” *Types of Mankind* was hugely popular, selling out a print run of 3,500 within four months and was reprinted several times.<sup>57</sup> Far more people read and digested Nott’s arguments in this form as compared with his medical journal articles, which were generally consumed by a select and specialized audience.

Southern physicians were clearly influenced by Nott’s emphasis on the importance of blood to racial difference. His claim that the slightest “admixture” of Black blood would protect against yellow fever first appeared in the *Southern Journal of Medicine and Pharmacy* in 1847. Reporting on the devastating yellow fever epidemic in New Orleans in 1853, Erasmus Fenner observed, as Nott had in Mobile, that this virulent strain had attacked the city’s Black population but offered an important qualification clearly derived from Nott: “the least admixture of the white race with the Black seems to increase the liability of the latter to the dangers of yellow fever; and the danger is in proportion to the amount of white blood in the mixture.” Similarly, when Memphis physician Ayres P. Merrill published his 1856 account of the “Distinctive Peculiarities and Diseases of The Negro Race,” he included the claim that Blacks and mulattoes “are obnoxious to attacks of yellow fever, pretty much in proportion to the preponderance of white blood.”<sup>58</sup> Nott’s work also resonated beyond North America. The British Association for the Advancement of Science, meeting in Manchester in 1861, was informed that “the negro race on the West Coast of Africa, especially, is exempted from yellow fever, and that a very small portion of African blood is sufficient to resist the influence of this disease.”<sup>59</sup> French naturalist Georges Pouchet cited Nott and others to support his claim that “there was, even in the constitution of the black man, an obstacle—otherwise absolutely unknown in his nature—to the manifestation of the yellow fever; and that the black blood appeared to carry on this resisting force to the mixed breed, even if they were born far away.”<sup>60</sup>

Nott had a deeper and even more sinister reason to promote internal and innate differences between white and Black bodies. Nott was the leading American ethnologist in the 1850s promoting polygenesis. His *Types of Mankind* and *Indigenous Races of the Earth* (1857) set out to prove that white and Black people did not share the same origins and had always been fundamentally different. Starting out from the presumption that “the white and black races . . . are distinct species . . .” Nott believed that “if we can show that these races are not affected in like manner by diseases, we fortify the conclusion to which natural history has led us.” Nott argued that “as long as a race preserves its peculiar physiological structure and laws, it must to some extent be peculiarly affected by morbid influences.”<sup>61</sup> Data relating to the West India Regiments helped to make his point. When the 2nd West India Regiment (2WIR) was posted to Sierra Leone in 1825, most of the 300 white troops accompanying them quickly sickened and died, whereas the 2WIR “only lost one man, and had seldom any in the hospital.”



What was significant to Nott was that the men of the 2WIR “had been born and brought up in the West Indies; and, according to the commonly received theory of acclimation, should not have enjoyed this exemption.” These men were proof, he thought, that they had inherited specific disease resistance from their African forebears, something that no white men could ever acquire. Indeed, Nott went so far as to claim that “No length of residence acclimated the whites in Africa; on the contrary, it exterminates them.”<sup>62</sup> In reality, Nott’s claim relating to the 2nd West India Regiment was based on a flawed assumption. Most of these men had actually been recruited from among the liberated Africans deposited by the Royal Navy in Sierra Leone and so had probably been exposed to the yellow fever virus as children. Nott’s readers had no way of knowing this, of course, and his claims for racial immunity went generally unchallenged.

Nott’s polygenist arguments were ultimately dismantled by Darwin’s *On the Origin of Species*, published in late 1859, but Nott’s focus on blood as the key racial signifier endured. Claiming that impure blood “cannot be washed out in many generations,” Nott prioritized the role of blood in transferring permanent traits between generations, promoting the idea of hereditary “instincts” that included intellect, abilities in the arts and sciences, and agricultural innovation.<sup>63</sup> Nott’s importance lies in the extra-special attributes that he endowed blood with. By stressing that just “one drop” of Black blood was sufficient to defeat yellow fever, Nott had paved the way for the racial discrimination that would thrive long after the American Civil War ended slavery. And that was precisely his purpose in doing it. Anyone with the slightest hint of nonwhite ancestry, even if light skinned, would be treated as Black under the rules and regulations established in many Southern states.<sup>64</sup> As Leslie Schwalm’s essay in this volume clearly demonstrates, the collection of military-medical data by Civil War physicians would provide a vital underpinning to this intellectual trend reasserting the supposed differences between Black and white male bodies.

The evolution of thought about Black resistance to yellow fever therefore mirrors changing ideas about race more generally. In the early modern era, skin color was just one of several racial signifiers, but toward the end of the eighteenth century it became the dominant racial marker.<sup>65</sup> Fergusson endowed Black skin with special properties during this period. But racial thought continued to evolve and moved from the external to the internal parts of the body as a surer way of fixing blackness and whiteness upon individuals. As something that “cannot be washed out,” the importance increasingly given to Black blood by physicians such

as Nott facilitated policies both in the United States and beyond that led directly to the disenfranchisement, discrimination, marginalization, and oppression of nonwhite peoples.

## NOTES

1. William Hillary, *Observations on the changing nature of the air and the concomitant epidemical diseases in the island of Barbadoes*, 2nd ed. (London: L. Hawes, 1766), 146.
2. Suman Seth, *Difference and Disease: Medicine, Race and the Eighteenth-century British Empire* (Cambridge: Cambridge University Press, 2018), 93.
3. Hugh Smythson, *The compleat family physician or, universal medical repository* (London: Harrison & Co., 1785), 479.
4. Henry Warren, *A treatise concerning the malignant fever in Barbados* (London: Fletcher Gyles, 1740), 13.
5. While acquired immunity likely played some role in physicians’ beliefs about racial immunity, Urmi Engineer Willoughby has pointed out the dearth of actual evidence proving yellow fever’s endemic nature in early modern West Africa. Urmi Engineer Willoughby, *Yellow Fever, Race, and Ecology in Nineteenth-Century New Orleans* (Baton Rouge: Louisiana State University Press, 2017), 13–17.
6. Kenneth F. Kiple and Virginia H. Kiple, “Black Yellow Fever Immunities, Innate and Acquired, as Revealed in the American South,” *Social Science History* 1 (1977): 419–36.
7. Kenneth Kiple, using data from the Mississippi River valley in 1878, argued that innate resistance was real. Sheldon Watts and Mariola Espinosa disagree, using modern data to prove the continued deadly impact of yellow fever on some West African communities. Kiple and Kiple, “Black Yellow Fever Immunities,” 428; Sheldon Watts, “Yellow Fever Immunities in West Africa and the Americas in the Age of Slavery and Beyond: A Reappraisal,” *Journal of Social History* 34 (2001): 95–67; Mariola Espinosa, “The Question of Racial Immunity to Yellow Fever in History and Historiography,” *Social Science History* 38 (2014): 437–53. See also my “‘Like a Clap of Thunder in a Clear Sky’: Differential Mortality during Savannah’s Yellow Fever Epidemic of 1854,” *Social History* 37 (2012): 166–86, and Willoughby, *Yellow Fever, Race, and Ecology*, 120–41.
8. Rana A. Hogarth, *Medicalizing Blackness: Making Racial Difference in the Atlantic World, 1780–1840* (Chapel Hill: University of North Carolina, 2017), 41–43.
9. John Lining, *A description of the American yellow fever which prevailed at Charleston in South Carolina in 1748* (Philadelphia: Thomas Dobson, 1799), 7; David Ramsay, *The Charleston Medical Register for the Year 1802* (Charleston: W. P. Young, 1803), 21.
10. Robert Jackson, *A Treatise on the Fevers of Jamaica, with some observations on the intermitting fever of America* (London: J. Murray, 1791), 249–50.
11. William Wright, “Practical observations on the treatment of acute diseases, particularly those of the West Indies,” *Medical Facts and Observations* 7 (1797): 8–9.
12. William Pym, *Observations on Bulam Fever which has of late years prevailed in the West Indies, on the coast of America, At Gibraltar, Cadiz and other parts of Spain* (London: J. Callow, 1815), 154.

13. Mark Harrison, *Medicine in an Age of Commerce and Empire: Britain and Its Tropical Colonies, 1660–1830* (Oxford: Oxford University Press, 2010), 108.
14. For a thorough account of the Hankey's voyage, see Billy G. Smith, *Ship of Death: A Voyage That Changed the Atlantic World* (New Haven, CT: Yale University Press, 2013).
15. James Clark, *A treatise on the yellow fever as it appeared in the island of Dominica in the years 1793–4–5–6* (London: J. Murray, 1797), 2–3.
16. Pym, *Observations on Bulam Fever*, 13, 118.
17. Colin Chisholm, *An essay on the malignant pestilential fever introduced into the West Indian Islands from Boullam, on the coast of Guinea, as it appeared in 1793 and 1794* (London: C. Dilly, 1795 & Philadelphia: Thomas Dobson, 1799), 97.
18. Chisholm, *An essay*, 102.
19. Chisholm, *An essay*, 99–101.
20. Pym, *Observations on Bulam Fever*, 128, 130–32.
21. John Vaughan to Duke of Portland, December, 22 1794, WO1/31. National Archives, London.
22. William Windham to General William Myers, April 24, 1795; William Windham to Thomas Fauquier, May 27, 1795. WO4/158 National Archives, London.
23. For example, forty-six men born in India were enlisted into the 6th West India Regiment (cited hereafter as WIR) in late 1797 and early 1798, all recruited in England. Most (twenty-eight) came from Bengal. This was despite a protest from the directors of the East India Company about the loss of their crews. See William Huskisson to Colonel Robert Brownrigg, September 18, 1797, WO6/131 and the Succession book for the 6WIR, WO25/657. When the 7WIR was disbanded in 1816, more men listed their birthplace as the West Indies than in Africa, the most common locations being Guadeloupe and Curaçao, and the 4WIR contained rank-and-file soldiers from Ireland, England, Scotland, Holland, Portugal, India, and four different Caribbean islands. WO25/2740 (4WIR) and WO25/2744 (7WIR).
24. The 4WIR added 244 recruits during 1797 alone, 158 from Africa, with most of the rest from British, French, Danish and Dutch islands, and three registering their birth as North America. WO25/653 new recruits in 1797 listed nativity as follows: 158 Africa; 36 St. Kitts; 12 Montserrat; 10 St. Eustatius; 8 Antigua; 7 Tortola; 3 St. Croix; 2 Guadeloupe; 1 Martinique; 1 Jamaica; 1 Nevis; 1 Dominica; 1 St. Lucia; 1 New York; 1 Charleston; 1 America.
25. "Returns of Brit Troops in y<sup>e</sup> West Indies, from 1795 to 1802 given to W.Y by J. Sayers Esq<sup>r</sup> Com<sup>try</sup> [commissary] in y<sup>e</sup> West Indies," in Abstract of British West Indian Trade and Navigation from 1773 to 1805. British Library, Stowe MS 921.
26. Lining, *A description of the American yellow fever*, 7.
27. Charles White, *An account of the regular gradation in man* (London: C. Dilly, 1799), 79.
28. Philip Tidyman, "A Sketch of the Most Remarkable Diseases of the Negroes in the Southern States," *The Philadelphia Journal of the Medical and Physical Sciences* 12 (1826): 325.
29. William Fergusson, *Notes and Recollections of a Professional Life* (London: Longman, 1846), xii.
30. David Geggus, *Slavery War & Revolution: The British Occupation of Saint Domingue, 1793–1798* (New York: Oxford University Press, 1982), 359, 362, 365–66; David Geggus, "The Cost of Pitt's Caribbean Campaigns, 1793–1798," *Historical Journal* 26 (1983): 699–706.
31. Bryan Edwards, *The History, Civil and Commercial of the British Colonies in the West Indies*, 3 vols. (London: John Stockdale, 1801), 3: 174; Edwards, *An Historical Survey of the French Colony in the Island of St. Domingo* (London: John Stockdale, 1797), 164.

32. General Return of Foreign and Black Corps, July 1796, WO17/1988. The only WIR soldiers to serve in Saint-Domingue were seconded noncommissioned officers serving with the Black militia corps. See other returns in WO17/1988.
33. Hector M'Lean, *An enquiry into the nature, and causes of the great mortality among the troops at St. Domingo: With practical remarks on the fever of that island; and directions, for the conduct of Europeans on their first arrival in warm climates* (London: T. Cadell, 1797), 2, 3, 5.
34. William Fergusson, "On the Nature and History of the Marsh Poison," *Transactions of the Royal Society of Edinburgh* 9 (1823): 280.
35. William Fergusson, "An Inquiry into the Origin and Nature of the Yellow Fever," *Medico-Chirurgical transactions* 8 (1817): 108–72; Fergusson, "On the Nature and History of the Marsh Poison," 273–98; Fergusson, "On the Qualities and Employment of Black Troops in the West Indies," *United Service Journal* (1835): pt. 1, 523–28; Fergusson, "On Malaria and Yellow Fever in the West Indies," *United Service Journal* (1837): pt. 3, 377–82; Fergusson, "On the Supposed Contagious Property of Yellow Fever," *United Service Journal* (1838): pt. 2, 380–85; Fergusson, "Dr Fergusson on Yellow Fever," *Medico-Chirurgical review* 32 (1840): 297–307; Fergusson, *Notes and Recollections of a Professional Life* (London: Longman, 1846).
36. Fergusson, *Notes and Recollections*, 155.
37. Fergusson, "On the Supposed Contagious Property of Yellow Fever," 380; Fergusson "On Malaria and Yellow Fever in the West Indies," 382.
38. Fergusson, "An Inquiry into the Origin and Nature of the Yellow Fever," 297.
39. Fergusson, *Notes and Recollections*, 206–7.
40. White, *An account of the regular gradation in man*, 57. For others who discuss the supposed thicker skin of Africans, see Mark M. Smith, *How Race Is Made: Slavery, Segregation and the Senses* (Chapel Hill: University of North Carolina Press, 2006), 16–18, 23.
41. WO334/174 Reports into Delirium Tremens, March 9, 1841, Return of 2nd WIR in Bahamas.
42. George Pinckard, *Notes on the West Indies*, 2 vols. (London: Baldwin, Cradock and Joy, 1816), 2:134–35. Like Charleston's slave hospitals that, as Rana Hogarth discusses elsewhere in this volume, prioritized the needs of masters, the army's medical facilities primarily existed to serve the needs of the British state by ensuring men were fit enough to fight.
43. Examples of those citing Fergusson's work on yellow fever include George Frederick Bone, *Inaugural Dissertation on Yellow Fever, and on the Treatment of that Disease by Saline Medicines* (Edinburgh: Adam and Charles Black, 1846); John Hastings, *Lectures on Yellow Fever* (Philadelphia: Lindsay & Blakiston, 1848); Edward Bancroft, *A Sequel to an Essay on the Yellow Fever* (London: J. Callow, 1817); Thomas Nicholson, *An Essay on Yellow Fever* (Antigua: W. Mercer, 1856); and James Johnson, *Influence of Tropical Climates on European Constitutions* (London: S. Highley, 1841).
44. Daniel Blair, *Report on the First Eighteen Months of the Fourth Yellow Fever Epidemic of British Guiana* (pamphlet 1856), 80. While Fergusson is not cited in this particular publication, Blair was clearly familiar with his works, describing him as one of the "respected" Inspector Generals of Hospitals in the West Indies. See Daniel Blair, *Some Account of the Last Yellow Fever Epidemic of British Guiana* (London: Longman, 1850), 57.
45. Adrian Desmond & James Moore, *Darwin's Sacred Cause: Race, Slavery and the Quest for Human Origins* (London: Allen Lane, 2009), 129–30; Edward Beasley, "Making Races," *Victorian Review* 40 (2014): 50.



46. Josiah Nott, "The Mulatto A Hybrid," *Boston Medical & Surgical Journal* 29 (August 16, 1843): 30.
47. Josiah Nott, "Statistics of Southern Slave Populations," *Commercial Review of the South and West* (November 1847): 281.
48. Josiah Nott, "Unity of the Human Race," *Southern Quarterly Review* 9 (January 1846): 9.
49. J. C. Nott, "Yellow Fever Contrasted with Bilious Fever," *New Orleans Medical and Surgical Journal* 4 (1848): 563, 580.
50. Winthrop Jordan, *White over Black: American Attitudes toward the Negro* (Chapel Hill: University of North Carolina Press, 1968), 166. See William Wright, *Memoir of the Late William Wright* (Edinburgh: William Blackwood 1828), 117, for an example of this.
51. Brooke N. Newman, *A Dark Inheritance: Blood, Race, and Sex in Colonial Jamaica* (New Haven, CT: Yale University Press, 2018), 69, 232. See also Guillaume Aubert, "'The Blood of France': Race and Purity of Blood in the French Atlantic World," *William and Mary Quarterly* 61 (2004): 439–78, and María Elena Martínez, "The Black Blood of New Spain: Limpieza de Sangre, Racial Violence, and Gendered Power in Early Colonial Mexico," *William and Mary Quarterly* 61 (2004): 479–520.
52. James Thomson, *A Treatise on the Diseases of Negroes as They Occur in the Island of Jamaica* (Jamaica: Alex Aikman, 1820), 5.
53. Wright, *Memoir*, 407.
54. Josiah Nott, "The Mulatto A Hybrid," *Boston Medical & Surgical Journal* 29 (August 16 1843): 29–32; Josiah Nott, *Two Lectures on the Natural History of the Caucasian and Negro Races* (Mobile: Dade and Thompson 1844); Josiah Nott, "Unity of the Human Race," *Southern Quarterly Review* 9 (January 1846): 1–57; John Bachman "An Examination of the Characteristics of Genera," *Charleston Medical Journal* 10 (1855): 201–22.
55. Nott, "Unity of the Human Race," 47. On the problems of some slaves being too white, see Joshua D. Rothman, *Notorious in the Neighborhood: Sex and Families across the Color Line in Virginia, 1787–1861* (Chapel Hill: University of North Carolina Press, 2003), 216–18; see also Joel Williamson, *New People: Miscegenation and Mulattoes in the United States* (Baton Rouge: Louisiana State University Press, 1995), 61, and Elise Lemire, *Miscegenation: Making Race in America* (Philadelphia: University of Pennsylvania Press, 2002), 111.
56. J. C. Nott, "The Epidemic Yellow Fever of Mobile in 1853," *New Orleans Medical and Surgical Journal* 10 (1854): 583. On the impact of the 1853 epidemic on Nott's family, see Reginald Horsman, *Josiah Nott of Mobile: Southerner, Physician, and Racial Theorist* (Baton Rouge: Louisiana State University Press, 1987), 164.
57. J. C. Nott and George R. Gliddon, *Types of Mankind* (Philadelphia: Lippincott, Grambo & Co., 1854), 68; Bruce Dain, *A Hideous Monster of the Mind: American Race Theory in the Early Republic* (Cambridge, MA: Harvard University Press, 2002), 225. According to one historian, it became "the most widely read work on polygenism." B. Ricardo Brown, *Until Darwin, Science, Human Variety and the Origins of Race* (London: Pickering & Chatto 2010), 90.
58. J. C. Nott, "An Examination into the Health and Longevity of the Southern Sea Ports of the United States, with Reference to the Subject of Life Insurance," *Southern Journal of Medicine and Pharmacy* 2 (January 1847): 19. E. D. Fenner, *History of the Epidemic Yellow Fever at New Orleans in 1853* (New York: Hall, Clayton & Co., 1854), 56; A. P. Merrill, "Distinctive Peculiarities and Diseases of the Negro Race," *DeBow's Review* 20 (May 1856): 622.

59. *Report of the thirty-first meeting of British Association for the Advancement of Science held at Manchester in September 1861* (London: John Murray, 1862), 147. Nott was directly cited as the source for this claim.
60. Georges Pouchet, *The Plurality of the Human Race*, trans. Hugh Bevan (London: Longman, 1864), 60.
61. J. C. Nott and George R. Gliddon, *Indigenous Races of the Earth* (Philadelphia: Lippincott & Co., 1857), 360, 362.
62. Nott and Gliddon, *Indigenous Races*, 374–75.
63. J. C. Nott, *Instincts of Races* (New Orleans: L. Graham, 1866), 3, 5, 28.
64. See, for example, Christine B. Hickman, "The Devil and the One Drop Rule: Racial Categories, African Americans, and the U.S. Census," *Michigan Law Review* 95 (1997): 1161–1265; Lionel K. McPherson and Tommie Shelby, "Blackness and Blood: Interpreting African American Identity," *Philosophy & Public Affairs* 32 (2004): 171–92; Winthrop D. Jordan, "Historical Origins of the One-Drop Racial Rule in the United States," *Journal of Critical Mixed Race Studies* 1 (2014): 98–132.
65. Mark Harrison, *Climates & Constitutions: Health, Race, Environment and British Imperialism in India, 1600–1850* (Oxford: Oxford University Press, 1999), 11; Sharon Block, *Colonial Complexions: Race and Bodies in Eighteenth-Century America* (Philadelphia: University of Pennsylvania Press, 2018), 33; Edward Beasley, *The Victorian Reinvention of Race* (New York: Routledge, 2010), 1; Roxann Wheeler, *The Complexion of Race: Categories of Difference in Eighteenth-Century British Culture* (Philadelphia: University of Pennsylvania Press, 2000), 240.