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*Mosquito Soldiers: Malaria, Yellow Fever, and the Course of
the American Civil War* (review)

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Mosquito Soldiers: Malaria, Yellow Fever, and the Course of the American Civil War. By Andrew McIlwaine Bell. (Baton Rouge: Louisiana State University Press, 2010. Pp. 208. Cloth, \$29.95.)

It can not be said often enough. Disease was an important factor in the outcome of the Civil War, at least as important as the decisions of generals. It caused two-thirds of combatant mortality from 1861 to 1865, and likewise ravaged the civilians who lay in the war's path. Andrew Bell's *Mosquito Soldiers* drives this point home with careful case studies of two diseases, malaria and yellow fever. His pairing of these two diseases (and the associated title) is somewhat anachronistic; we now know that both are spread by mosquitoes, but participants in the war blamed other factors. It is true that yellow fever and the severe type of malaria, caused by *Plasmodium falciparum*, were diseases mostly limited to the South by 1860, and contemporaries saw them as particularly southern plagues that would scourge northern troops. But the milder malaria, caused by *Plasmodium vivax*, was a familiar resident of the upper Mississippi valley, the Chesapeake, and the Potomac basin in antebellum America. It was not a peculiarly southern disease, although it had been absent from New England for decades. Still, it is reasonable to begin with the assumption, common to medical and military thinkers north and south, that yellow fever and malaria would be a big problem for Union troops if they ventured into diseased southern regions.

Bell lays out three goals for his project in the introduction. First, he wants to emphasize the importance of disease in the war; second, he argues that malaria and yellow fever, in particular, "affected the timing and success of certain key military operations" (7); and third, he hopes that these case studies will elucidate a "clearer understanding of how environmental factors serve as agents of change in history" (7). He organizes his brief account into seven chapters, beginning with an antebellum background chapter on the history of both diseases, followed by a chapter that puts archival sources to good use in demonstrating the prevalence of mosquito pests as well as offering an overview of Civil War medicine. Chapter 3 describes scattered outbreaks of yellow fever along the southern coastline from Wilmington, North Carolina, to New Orleans. The next chapter describes malaria's importance in the western theater and lowland Carolinas in 1862 and early 1863, and chapter five describes the familiar story of the disease-ridden Peninsula campaign of the summer of 1862. In the last thirty pages the author considers the importance of malarial diseases in the indecisive battles over Arkansas, northern Louisiana, and East Texas, showing that an army flat on its back with

disease could not begin to carry out its missions, whether the river rose to expected levels or not. The book closes with the intriguing story of Dr. Luke Blackburn, who attempted to start a yellow fever epidemic in Washington, D.C., by importing supposedly infectious linen from yellow fever patients in Barbados.

Bell's work is soundly researched and well documented. He convincingly makes his primary point, that disease changed the strategies adopted and outcomes of warfare in certain locales. The book would have been stronger if he had emphasized change over time to a greater degree and had more clearly recognized the advances of Civil War medicine over those of, for example, the American Revolution or the horrors of the recent Crimean War. The Union medical corps was indeed in a shambles early in the war, but by the end of 1862 a more orderly system had taken hold, leading to better outcomes for the troops under care. Union medical care improved and Confederate care degenerated in the face of growing shortages of food, drugs, and supplies. Simplistic statements such as "The medical profession had made little progress since ancient times" (23) belie the effective therapies (including anesthesia) that the Civil War surgeon had to offer and miss much of the larger story of medical care in the war.

In particular, Bell downplays the role of quinine, saying that it only "suppresses the symptoms of malaria rather than prevents infection" (30); he would have done well to consult a modern pharmacological textbook on quinine's actual effectiveness. Quinine made an important contribution to the Union soldier's ability to function in the malarious South; the Confederacy, on the other hand, suffered greater and greater deficits in quinine supply as the blockade tightened. It is ironic that the two diseases that supposedly were to protect the South in fact did more harm to southerners themselves. Without quinine, the war's amplification of malaria meant that more southerners likely suffered and died of malaria than did Yankees. Likewise, yellow fever, imported by blockade-runners from the Caribbean, apparently killed more southerners than Yankees. Neither side had any effective remedy for this deadly disease. Although yellow fever was by far the more dangerous of the two, malaria ultimately triumphed in the numbers game. Its widespread influence on the war is nicely demonstrated by the maps that close the volume, showing its ever increasing geographical dominance over the course of the conflict.

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