Abstract: The early 20th century Southerner lived in a disease environment created by a confluence of poverty, climate and the legacy of slavery. A deadly trio of pellagra, hookworm and malaria enervated the poor Southerner—man, woman and child—creating a dull, weakened people ill equipped to prosper in the modern world. The Northern perceptions of the South as a backward and sickly region were only compounded by the realization that her population was malnourished, infected by worms, and continually plagued by agues and fevers. As historian John Duffy concluded, “As a chronically debilitating disease, it [malaria] shared with the other two the responsibility for the term ‘lazy Southerner.’”

Key Words: malaria, pellagra, hookworm, southern stereotypes

T he American South has been recognized as a distinct region since the colonial era. Its identity has been shaped by crops, climate, and slavery, but also by a persistent reputation for ill health. Although the United States as a whole battled various epidemic and endemic ills, by the early 20th century, the more prosperous areas of the country were increasingly able to buy health through improved sanitation.1,2 Three diseases—hookworm, pellagra, and malaria—were intertwined with the South’s social and economic structures, and acted to further retard the region’s growth.

Hookworm

In 1902 Charles Stiles shocked the southern medical profession by proclaiming that hookworm was common throughout the South. By 1905, physicians found that 40% or more of the southern population was infected.3 The lack of proper waste disposal and a paucity of shoes brought the fecal-borne larvae into frequent contact with the southern foot.

Hookworm causes iron deficiency anemia. In the malnourished Southerner, this led to stunted grown in children and weak adults.4 Dr. Benjamin Washburn described the hookworm sufferer as “pale and anemic . . . in children, development, both physical and mental, is retarded and an infected child is dull and backward at school. [A]dults . . . may feel weak, tire easily, and have shortness of breath. Also infected persons . . . crave and eat unusual things such as paper, green fruit, chalk, clay and dirt.”5 The connection of hookworm to filth unavoidably tarnished the South’s pride of place and culture. Northern papers scoffed at this “lazy man’s disease” that the South’s backwardness allowed to persist.3

Widespread recognition of this infestation led the Rockefeller Foundation in 1909 to establish a commission to fight hookworm in the South. A survey of 12 rural counties containing greater than 250,000 homes at the beginning of the commission’s work found only 50% of households had “any sort” of privy and only 10% had “a proper” privy. Even after 5 years of commission effort, a survey of southern school children found that 39% were still infected.3 Slow economic and hygienic gains over the next 50 years finally eradicated hookworm, erasing a marker of southern distinctiveness.

Helminth infections are not only a result of poverty, but act in turn to increase poverty by sapping worker vitality. Studies of iron deficiency anemia in Costa Rican children have demonstrated a long-term negative cognitive impact of anemia present in infancy and childhood.5 Upon the eventual ebbing of hookworm infections there was a demonstrable increase in school attendance and hence, literacy rates in the South.6

Pellagra

Although described in Italy in 1,735, pellagra was not recognized in the United States until the early 20th century. In 1902, a Georgian farmer complaining of weight loss, great

Key Points
• Negative stereotypes of Southerners may have been founded on their unique disease burden.
• Malaria, pellagra and hookworm were each endemic and uniquely crippling to the South before World War II.
blisters on his hands and arms, and melancholy every spring for the previous 15 years was recognized to be suffering from pellagra.⁷ Four years would elapse until it was diagnosed again, this time in an Alabama insane asylum, where the classic constellation of diarrhea, dermatitis, dementia and even death appeared in multiple inmates.

Over the next 5 years, southern clinicians would increasingly diagnose pellagra among their poor and institutionalized populations.⁸ These people subsisted largely on a diet of corn and fat pork. The situation was most acute for those living in prisons, orphanages, and asylums. Eight states from 1907 through 1911 recorded 15,870 cases of pellagra with a 39% fatality rate. In South Carolina alone in 1912, there were 30,000 cases with 12,000 deaths.⁹ But this underestimated the problem, as only 1 in 6 people suffering from pellagra sought out a physician.⁷

At that time, physicians believed that pellagra was caused by a germ of some sort, perhaps a fungus on corn or a virus spread by flies. In 1914, the US Surgeon General sent Dr. Joseph Goldberger south to investigate the cause of pellagra. He was impressed by the monotony of the diet eaten by the poorest Southerners, especially mill workers, tenant farmers, and institutionalized persons.¹⁰ Manipulating diet in experimental studies, he was able to both create and cure pellagra. Despite the denial of southern politicians that such malnutrition existed, in each of the years 1928, 1929, and 1930, the Southern Medical Journal showed nicotinic acid to be the precise corrective deficiency. flour producers began to enrich both white and corn flour with the newly identified vitamin. Such foods, available for other applications that might lead to economic development and progress of the South.¹¹

Goldberger’s prescription of a nutritious diet was beyond the means of many Southerners, but in the 1920s, researchers found that brewer’s yeast could prevent the disease. After work in the 1930s showed nicotinic acid to be the precise defect in pellagra, flour producers began to enrich both white and corn flour with the newly identified vitamin. Such foods, coupled with rising prosperity after World War II, finally eradicated pellagra in the South.

**Malaria**

Malaria was endemic in the South from the 1600s. Both vivax and falciparum malaria made major contributions to regional death and debility.¹² Positive Plasmodium smear rates throughout the 1910s in the South were between 22 to 43% among black sharecroppers and 5 to 13% among whites. By 1935, there were still more than 135,000 cases of malaria and greater than 4,000 deaths throughout the South.¹³

Malaria contributed to southern poverty through the direct symptoms it produced and indirectly through its economic, reproductive and cognitive impact.¹⁴ One of the most under appreciated consequences of malaria was its impact on the psyche of the host: “Anyone who has observed closely [sees the] ... effects on the mentality of the sufferer – mental activity is dulled, irritability of temper the rule, initiative is lacking ... ambition is lost and depression is a prominent symptom.”¹⁵ One commission reported in 1913 that malaria “leaves its subjects anemic and neurotic and is responsible for inertia, loss of will power, intemperance and general mental and moral degradation. It is probably the greatest foe to the development and progress of the South.”¹⁶

Although both hookworm and pellagra could weaken the worker, it was malaria that had the most striking impact on productivity. The 1913 report continued, “The economic loss, aside from the death it occasions, is wrought to [a] the individual through loss of time, money expended, and diminished efficiency [b] to the community through reduction of real estate values, difficulty inducing immigration.”¹⁷ One survey on a large Mississippi plantation in 1915 showed that more than a thousand worker days were lost to malaria with an economic cost equivalent to a $3.88 tax per acre.¹⁸

Malaria is particularly severe in women and children. Areas with endemic malaria have increased fertility rates leading to decreased investment per child and subjugation of women into childbearing and rearing roles.¹⁹ Furthermore, pregnant women are more susceptible to malaria, and infection during pregnancy is associated with increased rates of intrauterine growth retardation, miscarriages, prematurity and low birth weight.¹⁹

Malaria has subtle long-term consequences on cognition.²⁰ A study of 445 asymptomatic parasitemic Yemenese children found decreased performance among the parasitemic children in both fine motor skills and picture memory tests.²¹ Even short-term clearance of parasites led to some improvement. In addition, in modern countries that suffer a similar malaria burden to what was present in the American South, the disease is responsible for about 5% of all school absences. In addition, time and money spent caring for the sick is not available for other applications that might lead to economic growth.

Malaria disappeared from the American South by 1950. It declined markedly in the late 1930s as New Deal programs encouraged the movement of agricultural workers from farm to urban areas. The nascent CDC finished the job with a massive DDT spraying campaign after World War II.¹³ After three centuries, malaria’s influence on the health, economy and reputation of the South was finally broken.

**Conclusion**

The “lazy Southerner” of the early twentieth-century South was no myth, but a product of the culture and disease environment. The deadly trio of pellagra, hookworm and malaria created a dull, weakened people ill equipped to prosper. Not until the reign of these three enervating diseases ended could the modern South emerge.

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*A nation which does not remember what it was yesterday does not know where it is today.*

—Robert E. Lee