Summary

In the summer of 1943, 32-year-old Dorothy Vaughn works in the sorting station of a massive laundry room at Camp Pickett in central Virginia. The women who work there fold socks and trousers for the black and white soldiers who come to Camp Pickett for basic training. They worry over their loved ones who are headed off from Virginia to fight in World War II. Most of the women have left behind jobs working as domestic servants or laborers to work in the laundry. They earn 40 cents an hour, which means that they are paid the least of all those who work in the service of the war. Nonetheless, it feels like a lot to them.

Dorothy, a recent college graduate, also works a job in Farmville, Virginia as a teacher. Teachers are considered very accomplished in the black community because they are thought of as the leaders of social movements. Vaughn's husband's parents are business owners and members of the black elite, and her family's name regularly appears in the social columns in the newspaper. She lives in a large Victorian house with her in-laws and their parents.

Dorothy eagerly accepts the work at Camp Pickett, even though another woman in her position and of her status might have looked down on it. The laundry is 40 miles away from her home, which means she has to live in worker housing during the week. But the 40 cents an hour is more than what she earns as a math teacher, and she has four children who can use the extra money. She wants to use it to send them to college. Even the most successful black people know that discrimination can, at any moment, destroy everything they have built, and a good education will offer her children a better chance at a good life.

Dorothy knows the money she is making at the laundry will buy school clothes and help her send her children to school. They inform every move she makes, though she often has to choose between spending time with them and working to make sure they have what they need.

Dorothy was born in 1910 in Kansas City, Missouri. Her mother died when she was two, and her father, a waiter, married Susie Johnson, a housekeeper. Susie taught Dorothy to read before she started school, which allowed her to skip two grades. She also enrolled Dorothy in piano lessons. Dorothy graduated early from high school as valedictorian, then won a full-tuition scholarship to Wilberforce University, the country's oldest private black college. The African Methodist Episcopal Sunday School Convention of West Virginia underwrote her scholarship.

At Wilberforce, Dorothy's professors recommended her for a master's degree in mathematics at Howard University, which was the best black university in the country. The first two black men in the country to earn PhDs in mathematics ran the department. Dorothy decided not to go to graduate school, however. The Great Depression had just begun and Dorothy's parents could not find work. She stayed home to help out and to ensure that her sister could also go to college. Dorothy was only 19 but she felt a great responsibility towards her family, so she chose to pursue a degree in education and become a teacher, which was the most stable career she would be able to find. At the time, black colleges got calls from schools nationwide requesting teachers and Dorothy, through her alma mater, landed a job at a school in rural Illinois.

Dorothy lost her job, however, when the Depression led the school to close after her first year. After losing a second teaching job, she took a job as a waitress until 1941, when she took a teaching job in Farmville. There, she met Howard Vaughan, a bellman for various hotels in the region. The two married. While he traveled for work, she attended Beulah AME Church, becoming the church's pianist.

In 1943, Dorothy goes to the post office and sees Melvin Butler's bulletin advertising jobs at the NACA. She also sees an article about the job in the Norfolk Journal and Guide. The article is called "Paving the Way for Women Engineers" and under the headline, Dorothy spots a picture of eleven "well-dressed Negro women," all graduates of Hampton's engineering school. This opportunity represents something Dorothy has never imagined for herself before. That spring, she fills out the application.

Analysis

Here, Shetterly establishes the type of labor generally available to black women at the time when Langley opened its doors to them. Shetterly is about to show us how much more they are capable of, and how much they are able to prove themselves once they get higher level jobs. This contrast drives home the injustice of the denial of equal opportunity for black women.

Dorothy's work as a teacher signals that she is a woman from a middle class background and an important member of her community. It also shows that Dorothy was already relatively privileged when she came to work at Langley, hinting at the class dynamic of the book: it was only women who could afford an education who were hired at Langley.

Dorothy's work at Camp Pickett points to the sacrifices many black women had to make at this time simply to ensure a future for their children. Dorothy was not without resources or connections, and yet she had to go to great lengths to support her family. Due to racial discrimination and economic inequality, black families had to work harder than whites for less pay to ensure their children's' futures.

This moment shows the difficult choices black women faced: to support their children, they often couldn't spend as much time with them as they wanted. This is cruel and tragic.

Shetterly sets the groundwork for Dorothy's success, highlighting the resources she had access to because of her supportive family and community. From her work at Camp Pickett, it's clear that Dorothy is hardworking and focused, but this passage makes clear her intelligence and ambition. These elements all play a major role in her story, ultimately leading her to Langley.

The fact that Dorothy made it into the master's program at Howard as a young woman signals that she was a rare talent. However, Shetterly also indicates that Dorothy was subject to the same constraints that restricted the opportunities available to many women (black and white) at the time. Women were expected to take care of their families, pursue stable careers, and work in the service of others unconvincingly before they could follow their own ambitions.

Here, Shetterly emphasizes Dorothy's resilience. Though she was brilliant enough to get into a master's program in math, Dorothy faces tremendous obstacles in finding work, even as a teacher. Even though Dorothy's intelligence and ambition are thwarted at every turn, she still builds a meaningful life for herself, finding work, community, and family.

Serendipity and luck play a massive role in the fates of Shetterly's computers, and this is only the first of many moments in the book that demonstrate this. Dorothy happens to see this article and to have the resources to apply, which is lucky. However, it's not only luck—her preparation for the role, her intelligence, and her persistence ultimately allow her to succeed.

Chapter 3

Summary

It's 1943. Dorothy is a member of her local parent-teacher association and a founding board member of her town's chapter of the NAACP. She teaches algebra in a severely underfunded school with eight classrooms and no gym, lockers, or cafeteria. Nevertheless, she maintains high standards, to the point of correcting errors she finds in the school's textbooks and contacting their publishers. She leads the school choir and helps push them into statewide music competitions. She also teaches a class called "Wartime Mathematics," using math to help students understand household budgeting and wartime rations, and writing fighter plane trajectories into her lesson plans.

After filing her application to the NACA, Dorothy wins a place there as a Mathematician, Grade P-1, where she'll earn more than twice her teaching salary. To take the job she has to leave her family and the school and town she loves behind. Langley is too far away for her to come home on weekends, and so she simply says goodbye to her family and tells them she'll be home for Christmas.

Luck, Persistent Action, and Hard Work

Pioneering black computers like Johnson, Vaughan and Jackson worked very hard. They also benefitted from healthy doses of luck. Shetterly argues that hard work and persistence set the stage for luck to make a difference in a person's life, and she uses the term "serendipity" to describe what happens when random chance collides with preparedness. Serendipity, according to Shetterly, was a key ingredient in the West Area computers' accomplishments.

Black computers like Johnson and Vaughan demonstrated a unique grasp of what Shetterly calls the "long-term impact of persistent action." This hard work and persistence characterized all the work they did for the NACA. Katherine Johnson's calculations wound up in significant scientific papers, but Johnson was forbidden to sit in on the editorial meetings where these papers were reviewed and scrutinized. So she kept asking to be included. "Her requests were gentle," Shetterly writes, "like the trickle of water that eventually forces its way through rock.... She asked early, she asked often, and she asked penetrating questions about the work." Finally, she broke through. "The engineers just got tired of saying no. Who were they, they must have figured, to stand in the way of someone so committed to making a contribution, so convinced of the quality of her contribution that she was willing to stand up to the men whose success—or failure—might tip the balance in the outcome of the Cold War?" Here, Shetterly shows how Johnson's unique diligence set her apart and helped her achieve her dreams.

Dorothy Vaughan took advantage of a similar strategy. At 50, realizing she was going to be put out of a job by the IBM computers that were rapidly replacing her team, she reinvented herself as a programmer, teaching herself to code. "If anyone could bear witness to the long-term impact of persistent action, and also to the strength of the forces opposing change, it was Dorothy Vaughan," Shetterly writes. Here, she shows how Vaughan, like Johnson, demonstrated unflagging resilience so that she could achieve her goals.

The computers were also very lucky, both to get jobs at the NACA, and because they happened to find themselves there at a time when, slowly but surely, opportunities were opening up for women and black people in the sciences. Shetterly writes that Katherine Johnson's friends and colleagues tended to think of her as "lucky," explaining that it had always been her "great talent to be in the right place at the right time." It was, for example, sheer luck that Johnson was at a wedding in 1952 where her brother-in-law mentioned that the NACA was looking for black female computers. Johnson applied for a position that same year. She felt "'very, very fortunate,' to have lucked into a job that paid her three times her salary as a teacher." Shetterly writes, highlighting the role Johnson believed luck played in her career.

Shetterly also examines the function of luck in the advancement of some female computers into senior roles. She writes, "In 1974, an equal opportunity program gave Gloria [Champine] the chance to advance from a clerical position in the Dynamic Loads Division into a faster-track administrative position in the Acoustics Division." In part because of the luck of her timing (her work at the NACA coincided with the equal opportunity program), Champine was able to work her way up from secretary to Technical Assistant to the Division Chief of Space Systems, "a job that had previously only been held by men." Shetterly again shows that luck—in this case related to timing—played a crucial role in the progress of women and people of color made at the NACA in this era.

Shetterly is clear, however, that luck alone does not account for the success of black computers at the NACA; it was luck on top of a bedrock of perseverance, talent, and effort. Shetterly calls this combination of luck