History

The Second Reported Case of Sickle Cell Anemia
Charlottesville, Virginia, 1911

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In the November 1910 issue of the Archives of Internal Medicine James B. Herrick of Chicago reported on “Peculiar Elongated and Sickle- Shaped Red Blood Corpuscles in a Case of Severe Anemia.” Three short months later, in the February 1911 issue of the Virginia Medical Semi-Monthly, an author identified erroneously as “R.E. Washburn, University of Virginia” (it should have read “B.E. Washburn”), published a case report citing Herrick’s article and using precisely the same descriptive title as Herrick. These two reports, appearing in the medical literature within the space of a few months during late 1910 and early 1911, introduced modern medicine to the disorder that came to be known as sickle cell anemia (SCA). The articles were recognized by subsequent researchers in the field as the first published notices of the new disorder and served as models for the two other case reports of SCA that appeared in the medical literature (1915 and 1922) before more intensive studies of the disease began in the early 1920s.

Herrick’s and Washburn’s pathbreaking case reports are of historical interest not only for the information they convey about a newly discovered and quite important medical condition, but also for the glimpse they can provide readers into certain aspects of medicine and society at the turn of the 20th century. Specifically, the stories behind the two cases—of the lives of the physicians and patients involved, the circumstances that brought the physicians and patients together, and the events that led to publication of the two articles—reflect the excitement and competitiveness of medical science in early 20th century America and the varying economic and social status of people of color in the United States at that time.

This paper describes in detail the discovery of the second case of SCA in Charlottesville, Virginia, and then briefly discusses the striking differences in authorship and patient background between the first two published cases.

Benjamin Earl (sometimes spelled Earle) Washburn was a fourth-year medical student at the University of Virginia (UVA) when he wrote his article about Ellen Anthony, the second reported sickle-cell patient in the medical literature. These two young people’s lives intersected for a few months during the winter of 1910-1911 and then moved in different directions, never to cross again, just as had occurred with the first sickle cell patient and his physicians. For Washburn, Ellen Anthony was an “interesting case.” For Anthony, Benjamin Washburn was probably just another of the many students, interns and attending physicians she saw during long months spent as a patient on the wards of the University of Virginia Hospital. Would they have remembered each other’s names a year later? Though they had a short-term common interest—Ms. Anthony’s health—Washburn and Anthony, approximately the same age, were worlds apart.

Washburn was born on December 29, 1885, and raised in western North Carolina, in and around the small town of Rutherfordton. The eldest child of John Rutherford Washburn, a merchant, and Camila Miller,
Benjamin Washburn had two brothers and three sisters. Though the family was not wealthy, owing to a number of unfortunate business deals John Washburn made when his children were growing up, the Washburn parents valued education and managed to send all their children to college. As a teenager Ben Washburn worked in Rutherfordton after school and during summers to save enough money to pay for his first undergraduate year at the University of North Carolina (UNC). During his college years he earned money by tutoring, typing notes, lectures and theses for students and professors, working at the UNC Library for Librarian Louis Round Wilson, and serving as secretary to C. Alphonso Smith, a nationally known professor of English literature. Washburn also used his earnings to help defray his brothers' and sisters' college expenses whenever he could.7

During his years at UNC (1902-1906), Washburn earned a reputation (retained in graduate and medical schools) for being a reader and lover of literature.8 As campus yearbook editors characterized him in the 1906 Yackety Yack: “[H]e has distinguished himself...by passing off a large number of hours without opening a text-book, and by reading every book in the library. It is said that ten men are necessary to turn the leaves when he reads.”9 His UNC Library job allowed him to become acquainted with, by his own estimate, “at least 90 percent of the academic student body and many of those in the professional departments.”10 Among the contacts he made were a number of future prominent North Carolinians, contacts that served Washburn well throughout his life. Upon graduating from UNC in 1906, Washburn thought he would become a teacher. A year as principal of a rural school in Wilson Mills, NC, near Smithfield, convinced him otherwise, and he returned to UNC the following year as a graduate student, to pursue his interest in literature. Recognizing that a master’s degree in English would inevitably lead him back to teaching, the profession he had just left, Washburn considered and rejected possible careers in law and pharmacy. He ultimately selected medicine because, as he stated in his autobiography, UNC allowed him to apply credits he had earned from undergraduate biology, chemistry and physics courses toward his MD degree and to use that time to take graduate courses in English.11

Washburn could thus remain a matriculant at the UNC medical school for two years, take English courses toward a master’s degree, and also earn tuition and expense money by working at the UNC Library, doing secretarial work for Professor Alphonso Smith, and taking in typing. Despite all these responsibilities and activities, Washburn touched his fellow medical students enough that they selected him Historian of the first year class and President of the second.12 He wrote a masters thesis under Smith, an expert on southern American literature, on the subject of the use of African-American dialect in the Uncle Remus stories.13

Because the UNC Medical School’s clinical program in Raleigh had a poor reputation (and would soon close under pressure from the American Medical Association and the 1910 Flexner Report), Washburn could not complete his medical education in North Carolina.14 Professor Smith had just accepted a position at the University of Virginia and offered his young assistant an opportunity to help him on a larger book project if he transferred to that institution. Smith also suggested that Washburn would probably encounter little difficulty securing a position at the UVa Library given all his experience at the University of North Carolina. The medical school at Charlottesville had earned a high rating from the AMA’s Council on Medical Education, further inclining Washburn to apply for admission there.15

Though he lacked sufficient funds to pay for a UVa education, Washburn decided he could earn the money during summers and with outside jobs during the year. Through a series of fortuitous occurrences he found a way to support himself for two years at UVa by working in the university library, then housed in the campus’ famous Rotunda building.16 He could now make plans to begin medical studies at the University of Virginia in the fall of 1909. It was on the wards of UVa’s teaching hospital that medical student Washburn met patient Ellen Anthony.

Ellen Anthony was born about 1885, though no available county or state documents record that event.17 She grew up in the rolling farmland and wooded hills of Campbell County, Virginia, around Evington and Lynch Station.18 White families with the surname Anthony owned property in that area dating back in some cases to colonial times.19 It is probable that the several African-American families with the surname Anthony—including Ellen Anthony’s—were once owned as slaves by some of the white Anthonys.

Entries in the UVa Hospital admis-

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sions books between 1907 and 1911 identify Ellen Anthony’s father as Richard Anthony, though no Richard Anthony with a daughter named Ellen appears in any of the appropriate manuscript censuses for Campbell County. The only available information concerning Richard Anthony derives from a few words in Washburn’s 1911 case report: “The patient’s father . . . is now an old man and has been in bad health for many years. He suffers with rheumatism and kidney disease.” Of the remainder of Ellen Anthony’s family almost nothing is known: Washburn’s 1911 article states that the patient’s mother “died about twenty years ago,” her four brothers and three of her sisters died in childhood, and her one remaining sister “died in a New York hospital last June, of some brain trouble.” Interviews conducted among members of the African-American and white communities of southern Campbell County (including Leesville, Altavista, Lynch Station and Evington) during the summer and fall of 1993 produced only one person who remembered or knew anything about Ellen or Richard Anthony.

Ellen Anthony worked, when she was able, as a cook and housemaid. Of her childhood and education no information is available save that she told Washburn she had been sickly all her life, enduring bouts of pneumonia, pleurisy, severe abdominal pain, malaria-like symptoms (chills and fever), chronic left-sided chest pain, frequent nose bleeds, shortness of breath on exertion, night sweats, constipation and indigestion. We know Ellen Anthony primarily through her illnesses.

Some five years before Anthony encountered Washburn on the wards, about 1905 or 1906, she developed the medical problems that eventually took her to Charlottesville for her first admission to the University of Virginia Hospital. Anthony found that any slight exertion caused her dizziness and shortness-of-breath as well as foot and ankle swelling. Once, when she knocked the skin off her left shin, a tenacious ulcer formed and became infected. At a later date an ulcer developed on her right leg, though she did not recall having hurt it. When severe, sharp, stabbing abdominal pains radiating from her left side to the region of the liver became increasingly frequent, she finally sought medical help.

Washburn’s 1911 article does not identify Anthony’s local physician, and no medical records of physicians from the Evington/Lynch Station area of Campbell County are extant, but a notation in the University Hospital Admissions Book for Ellen Anthony’s second admission (March 30, 1908) names “Dr. J.S. Irving” as her physi-
cian.28 J. Sinkler Irvine was, according to the 1909 American Medical Directory, the only physician practicing in Evington, Virginia, population 103. He graduated from the University of Louisville Medical Department in 1891 and received his medical license in 1895. Mrs. Anna Keller, Irvine’s daughter, remembered, during a May 1993 telephone interview, her father’s horse-and-buggy physician days at the turn of the century, but had no recollection of hearing about Ellen Anthony. Her father treated everyone in the area in those days, she said, but none of his patient records survive.29

Extrapolating from these scanty facts, one can conclude that Anthony, like other poor black and white residents of the area, probably turned to Dr. Irvine for medical attention after all home treatments and suggestions from relatives and friends had failed. Her abdominal crisis in the autumn of 1907 must have taken Anthony to Dr. Irvine, for shortly thereafter, Anthony was in Charlottesville, a patient at the new University of Virginia Hospital.

The UVA Hospital opened its doors for surgical procedures in 1901 and for the accommodation of 20 inpatients in 1902. In 1905, 30 more beds were added, and in November 1907 another 50, boosting the hospital’s capacity to 100. As the purpose of establishing a hospital at the University of Virginia was to provide medical and surgical care for charity patients and clinical experience for medical students, 80 of those 100 beds were devoted to indigents, equally divided among black males, black females, white males, and white females. Ward C, designated for public African-American female patients, was located in the South Wing of the basement, the same floor as the public black male ward and the dining rooms, kitchen and store room.30

Dr. Irvine reportedly knew a number of physicians at the University of Virginia Hospital, because he had begun his medical training there before transferring to the University of Lou-

isville to complete his MD degree.31 Ellen Anthony’s severe and puzzling symptoms, combined with the charity mission of the UVA Hospital and Dr. Irvine’s acquaintance with the university’s Medical School, may have induced him to send his patient to Charlottesville. Anthony was admitted before September 1, 1907, the beginning date of the hospital’s first admissions register, and discharged in December of that year, “feeling much improved,” according to Washburn’s information.32 The hospital register books indicate that for all her admissions Anthony was classified as a free or public patient assigned to Ward C.

Just three months following her discharge, on March 30, 1908, the young woman was back in the hospital, admitted again by Dr. Irvine, and suffering once more from severe abdominal pain and other symptoms. She was quickly transferred from the medical to the surgical service where she underwent an operation to remove a number of gallstones. Anthony remained in the hospital through mid-June, a period of some 80 days, and then returned home “well,” according to the entry in the hospital record book.33

She remained out of the hospital for almost a year, until April 1909, when she was again admitted with severe left-sided pain. Routine blood smears revealed, according to Washburn’s 1911 summary of Anthony’s chart from that 1909 hospital stay, “poliocytes in a variety of shapes, the most common variety being of a crescent shape,” though the term “crescent” does not appear in the hospital record book for that admission. Unfortunately, Anthony’s chart, along with all of the earliest University of Virginia Hospital patients’ charts, are missing.34 Were that chart available, it might reveal more details about an incident that could have changed the early history of sickle cell anemia and given credit for discovery of the disease to physicians at the University of Virginia in 1909.

According to the distinguished hematologist Russell L. Haden (1888-1952), who grew up near Charlottesville and received his undergraduate and masters degrees from UVA in 1910 and 1911, respectively, clinicians at the University of Virginia Hospital were sufficiently puzzled and intrigued by Ellen Anthony’s unusual blood smear in 1909 that they sent it to pathologists at the Johns Hopkins University Hospital for identification.35 The Hopkins pathologists, Haden recounted, interpreted the smear as an unusual instance of pernicious anemia rather than as evidence of a new blood disease worthy of further investigation and reporting in the medical literature. As a result, no one at the University of Virginia wrote about the Anthony case until after Herrick’s 1910 report apparently startled the Charlottesville physicians into identifying Anthony’s medical problem as a case of this newly-recognized form of anemia. UVA physicians could possibly have been the first to report sickle cell anemia because, though Herrick and Iorns noticed the strange shaped blood cells in 1904, they waited almost six years before publishing their case history.

Anthony’s regimen during her 2-month stay at the University Hospital included bed rest and potassium iodide. She left the ward in early June 1909, without the severe pains in her side, but also without a clear diagnosis of her condition.36 For three weeks she felt fine, but then began an almost 3-month siege of symptoms including pains in her left side that kept her in bed, shortness of breath, night sweats, and “sleep starts.” Leg ulcers, one of Anthony’s constant complaints from the time the illness first began in 1905 or 1906, enlarged and also caused her much pain.37 She finally had to return to Charlottesville for her fourth UVA Hospital admission on September 18, 1909, just a few weeks after the arrival in town of the other principal character in this story, Benjamin Earl Washburn.

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EARLY ONE MORNING during the first week of September 1909, a transferring third-year medical student from the University of North Carolina obtained his first view of the University of Virginia grounds and the Hospital that Ellen Anthony already knew so well. Benjamin Washburn, having ridden on the night train from Charlotte NC, to save money, arrived in Charlottesville, sleepless, at 7:00 am. Over the next several days he made his living, dining, and student employment arrangements and was ready to begin classes and his clinical clerkship as soon as the other medical students returned from summer break.

When the term began, Washburn’s medical school class of 19 was divided into two sections for clinical work, each spending half the year on the surgical service and half on the medical. As third-year students, they saw patients both in the hospital and in the dispensary (out-patient clinic). Though no corroborating evidence is available, Washburn must have encountered Ellen Anthony on the wards during this year of medical training. Anthony was quite sick and took a long time to recover. She spent 284 days in hospital, giving medical students ample opportunity to meet her and to study her case in the 100-bed charity hospital. Washburn described Anthony’s medical findings from this admission in great detail in his 1911 article, indicating that he had access to her chart and probably had examined her several times during his time on the wards. He mentioned the “crescent-shaped poikilocytes” again, as well as iron and arsenic treatments for her anemia.

Though Anthony recovered sufficiently to go home on July 9, 1910, after more than 9 months in Charlottesville, she had to return to the hospital just 100 days later. Washburn briefly described those 100 days at home in one paragraph of his 1911 article, offering readers some insight into the frustrating life Anthony must have led at this time.

The patient left the hospital June 27, 1910 [according to the hospital record book it was July 9, 1910], feeling much stronger and with the ulcers on her legs healed. She obtained employment as a cook. After working for about a month, the ulcer on her left leg broke down. She also had headaches, which were worse in the morning; and the pain in her left side returned. These troubles, together with general weakness, made it impossible for her to do regular work, and since August, she has been unable to do any kind of work, as exertion made her short of breath and caused her ankles to swell. She returned to the hospital, October 25, 1910.

By October of 1910 Washburn had entered his fourth year of medical school. As during the third year, his class was divided in two, and each group spent half the year on the medicine service and half on the surgical. Washburn rotated through medicine first and was assigned to Ellen Anthony when the young woman was admitted for the fifth time to Ward C on October 25th. Within a few weeks of this admission James B. Herrick in Chicago published his report describing “peculiar elongated and sickle-shaped red blood corpuscles in a case of severe anemia” in the Archives of Internal Medicine.

When Washburn and his instructors at the University of Virginia Medical Department actually read Herrick’s article is unknown, but an odd entry in the UVa Hospital Admissions Register at about that time raises some questions about Anthony’s care. The entry for Ellen Anthony’s fifth stay at UVa Hospital shows that she was discharged on November 15, 1910, after only 22 days in hospital. A second discharge date of April 1, 1911, also appears in that same record. There are several possible reasons for this curious insertion in the Admission Book. Perhaps the hospital authorities meant to discharge Anthony on November 15th and got as far as entering the information in the record book before they realized that she was not really well enough to go home and so kept her in hospital. Or perhaps Anthony actually left the hospital but returned hours or days later because she was so sick. Or perhaps the November issue of the Archives of Internal Medicine arrived about the 15th of November, after the hospital staff had decided to discharge or already had released Anthony. Suddenly someone, possibly Washburn, recognized the similarities between Herrick’s published case and Ellen Anthony’s medical problems and wished to investigate her condition further. Perhaps there was even some thought of earning the distinction of reporting the second case of “peculiar elongated sickle-shaped red blood cells in a patient with severe anemia.” Whatever the reason for her re-admission in November, Anthony must have been sick enough to be in the hospital, because she remained there until the following April.

Available records do not identify the person in Charlottesville who first recognized the similarities between Herrick’s patient, Walter Clement Noel, and Washburn’s patient, Ellen Anthony, although, as mentioned previously, some physicians at the medical school were well aware of Anthony’s atypical blood cells from her 1909 admissions. Washburn did not comment on this matter in his 1911 article or in his autobiography. He did state, however, that the idea of writing a history of the Anthony case and submitting it to a medical journal came from his professor of medicine, Dr. John Stange Davis Jr.: “Upon the suggestion of Dr. Davis and with his help, I prepared a report, illustrated with photomicrographs of blood smears.” Davis, professor of medicine, son of an early professor of anatomy at UVa and Washburn’s favorite instructor, had, according to the hospital record book, served as Anthony’s physician during her earlier stays in the hospital. He was also a member of the editorial board of the Virginia Medical Semi-Monthly, published in Richmond. It was the logical journal for a University of
Virginia medical student to approach for expeditious publication of the second case report of a newly discovered disease. The report quickly appeared. It was submitted after January 8th and published in the February 10th, 1911, issue, just three months after Herrick’s article.

Washburn refers to Herrick’s article at the beginning of his own, reviewing in two long paragraphs the earlier case’s salient features and quoting Herrick’s justification for publishing the case at all: “This case is reported because of the unusual blood findings, no duplicate of which I have ever seen described.” A brief third paragraph then explains Washburn’s publication: “There is a patient in the medical ward of the University of Virginia Hospital, with a somewhat similar history, whose blood shows the same, if not more marked, characteristics as in the case reported by Herrick. This patient has been under observation at intervals, since 1907.” The next three pages are packed with the history and present medical situation of Ellen Anthony (not named in the article, of course), whose initial admission to UVA Hospital occurred at about the time Herrick lost track of his patient in Chicago. Washburn tells of previous admissions; blood, urine, stool and sputum examinations; treatments; physical examination findings; and the patient’s course during each hospital stay. Similar to Herrick’s article, this paper also contains a photomicrograph, prepared by Washburn’s classmate, Frank P. Smart, illustrating the crescent-shaped red cells in Anthony’s blood.

Amid the abundance of medical particulars about physical findings and symptoms, Washburn occasionally includes details that remind readers of the human being behind the clinical descriptions:

She states that she has never had good health (p.490)
The patient is a cook and has always done house work. In September 1910, she weighed 115 pounds, but has fallen off since that time (p.490)
The patient is a fairly well developed Negro woman, with facies characteristic of her race, and looks intelligent (p.492)
[T]he teeth are few in number, decayed, and in a very bad condition (p.492)

The paper closes as inconclusively as did Herrick’s, with a positive statement about the patient’s current health (“general condition is much improved and she feels much better than when admission, on April 1, 1911, but not for the last time. She returned to the hospital at least 8 more times between August 22, 1911, and May 14, 1918, with the same familiar complaints on each occasion.”) Dr. Irvine remained her local physician, while Dr. Davis continued to supervise her care at the hospital. Admissions books through July 1922 do not record further hospital contact with Ellen Anthony beyond 1918, nor do local and state mortality records mention the death of Ellen Anthony. She was unrecognized in the state’s public records throughout her life.

Benjamin Earl Washburn’s life after publication of his article on sickle cell anemia is, on the other hand, well documented. He earned his MD degree from the University of Virginia in 1911 and served a 6-month internship at James Walker Memorial Hospital in Wilmington, North Carolina, before returning to his native Rutherford county for a 14-month stint as a country doctor in the South Mountains. Public health medicine and medical care to underserved populations then became his life’s work. Washburn joined the Rockefeller Sanitary Commission’s hookworm campaign in his native state, served as health officer for Nash County, North Carolina, then spent the remainder of his career with the Rockefeller Foundation’s International Health Division in the West Indies. Retiring to Rutherford County in 1939, he continued working for local and state health agencies and the community hospital in Rutherfordton. He died in 1980.

The first two articles describing cases of sickle cell anemia contain similar kinds of medical information, but the articles differ quite starkly on the matter of giving credit for scientific discoveries. The early 20th century continued the great era of medical discovery that began in the late 19th century with the advancement of
bacteriology and laboratory studies. Physicians and scientists were uncovering and naming new bacteria, studying basic pathology and physiology, and learning about normal and unusual components of blood. Individuals worked hard to gain the distinction of being called the discoverer of a bacterium or of a medical condition. In the instance of sickle cell anemia, credit for detecting and describing the first case went not to the physician who initially treated the patient and noted the abnormality, Ernest E. Irons, but to his attending physician, James B. Herrick, while credit for reporting the second one went not to the senior physicians who had worked with the patient previously but to a fourth-year medical student assigned to the patient on her fifth admission.

Why did John Staige Davis, the attending physician and professor who oversaw Ellen Anthony's care at the University of Virginia Hospital, allow credit for describing the second case of a newly recognized disorder to go to a medical student? Herrick, in a similar situation at Rush Medical College and Presbyterian Hospital in Chicago, gave only a passing nod in his 1910 article to his resident and protegé, Irons, who actually first saw the patient, Walter Clement Noel, recognized the oddly shaped red blood cells, and treated Noel for his medical problems over a 3-year period. Herrick, as senior attending physician on the case, took a leadership role in pursuing further information about the medical findings and in writing the report and presenting it at professional meetings. Extant records do not indicate why Irons did not receive equal credit with Herrick in those presentations and the resultant article on Noel's case of sickle cell anemia.

Perhaps it was Benjamin Washburn who first saw Herrick's article in the Archives of Internal Medicine and recognized the similarities with the case in his charge, the case of Ellen Anthony. If so, and Washburn pointed out the unique medical situation to his attending, then Davis apparently was the kind of person who had no need to claim even partial credit for a discovery that was not technically his. Or perhaps Davis was the one who noticed the similarities in the two cases but wanted to allow a younger person to shine. Whatever the reason, Washburn had one advantage over his classmates. His writing and typing abilities, developed in the bachelors and masters programs in English at UNC, were known at the Charlottesville medical school. Washburn’s classmates and teachers were well aware of the quality of his patient histories and of the way he typed them: “I was commended for them [the patient histories] upon a number of occasions,” he reported in his autobiography. Davis knew that Benjamin Earl Washburn could be trusted to write a good case report.

Finally, the contrast between the first two sickle cell anemia patients reported in the medical literature also bears comment. While opportunities in the United States for aspiring persons of color, both American and West Indian, to study and enter medicine, dentistry, and law were increasing during the late 19th and early 20th centuries, segregation in the South was becoming more rigid and formalized. Some African-American men and women felt the need to migrate to the North or to southern cities in search of better jobs. Large numbers of black people, however, remained in their rural or small-town homes, eking out a living in agriculture, unskilled labor or domestic service. The stories of the first two reported sickle cell patients illustrate these differences.

Walter Clement Noel, a man of color, was, in many ways, the social and professional equal of his physicians, Herrick and Irons. Noel came from a monied family on the island of Grenada, a British colony in the Caribbean. He attended college in Barbados and was, when he fell ill in the United States, a student at the Chicago College of Dental Surgery. He was unlike the majority of black patients his physicians usually saw in practice. The fact that Noel was well-educated and well-spoken may have stimulated Herrick and Irons’ interest in discovering the nature of the young man’s illness. Noel may have even assisted them in thinking through the problem. When Herrick and Irons lost track of Noel, it was because their patient had returned to his West Indian homeland to practice his profession of dentistry. Members of his family were landowners and known figures on an island where most residents, largely people of color, lived in poor circumstances with little opportunity for advancement.

Ellen Anthony, in contrast to Noel, was typical of many African Americans of her day. She appears to have grown up poor, had little education, earned little money, and was thus quite different, economically and socially, from her physicians, including the medical students who treated her. In Virginia’s racially segregated society of the late 19th and early 20th centuries, Anthony remained a relatively anonymous citizen. Public records reported neither her birth nor her death, as was also true of her father and the rest of her family. Whereas Walter Clement Noel’s history is easy to trace from family, school and official government sources, almost nothing is available on Ellen Anthony from any sources, written or oral. How ironic, considering that the disease from which she suffered and which was first discovered in her and in a West Indian dental student became one of the most studied in medicine.

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Notes


7. On Washburn's early years in Rutherfordton and the family's financial situation, see Washburn, To Every Thing (note 6), especially pp. 42-45. On John Rutherford Washburn, see an obituary in the News, October 6, 1932, p.4, column 2-3, located in the Washburn Papers, Rockefeller Archives, Box 8, Folder 54.

8. Washbum To Every Thing (note 6), pp.76-78.


10. Washburn. To Every Thing (note 6), p.79.

11. Ibid., pp.110-111.

12. Ibid., pp.111-114; University of North Carolina (UNC) Catalog, 1908-09, pp.177, 198; UNC Catalog, 1909-10, pp.207, 208; UNC, Yackey Yack (note 9), 1908, pp.125, 126; UNC, Yackey Yack 1909, pp.128, 129.


16. Ibid., pp.116-17.

17. There are virtually no records or documents other than the official register of the University of Virginia Hospital that name Ellen Anthony. The manuscript censuses for 1880, 1900, 1910 and 1920 (1890 is not available) do not mention her. The Commonwealth of Virginia's birth and death registers do not mention her. (Thanks to Sandra G. Treadway of the Virginia State Library for verifying this information.) Campbell County registers in the courthouse at Rustburg do not mention Ellen Anthony or her father Richard Anthony. Her exact age cannot be determined from the hospital records, as no birth date is given, and each admission lists a different age.

18. Information about the life of Ellen Anthony was gleaned primarily from statements in Washburn's article reporting Anthony's case of sickle-cell anemia, data provided in the University of Virginia Hospital Admissions Books for 1907-1918, and interviews with various citizens of Campbell County as indicated. No family papers, church or local hospital records or physicians' files could be located. Washburn states in his article (note 2), p.490, that "the patient... a native of Southwestern Virginia... has lived there all of her life."


20. University of Virginia Hospital Admissions Books, patient #1567 (4/7/05), #5802 (10/25/10), and #5077 (8/22/11), located on microfilm in the Medical Records Department, University of Virginia Hospital, Charlottesville VA.

21. The 1890 manuscript census for the Otter River District of Campbell County, p.113b, household number 204, includes a Richard Anthony, listed as a black male aged 40 who was a laborer; his wife Polly, aged 41, a housewife; and five daughters, aged three to nineteen, none named Ellen or anything close to that name. In 1900 (the 1890 manuscript census is not available), Richard Anthony is listed (p.133b, household number 121) as an African-American male farmer, born September 1833, 66 years old, married for 30 years. His family then consisted of his wife Polly, an African-American female, born October 1836, 63 years old, married for 30 years, having borne eight children three of whom were living, and a son John, an African-American male farm labor, born May 1875, 25 years old and single. The 1910 census (6th Supervisors's District, 25th Enumeration district, sheet 19a, household number 351) lists Richard Anthony as a 68-year-old African-American male farmer, married 20 years, his wife Polly, aged 65, having borne seven children, three of whom are living, and a 20-year-old single son John, who was a laborer.


23. Ibid., pp.490-1.

24. The author conducted numerous interviews with people throughout the area who might have known the Anthonys. Mr. T.J. Wilkinson Jr., of Lynch Station, remembered, during an interview on September 10, 1993, that two African-American residents of Lynch Station, Haynes and Josephine Arnold, took in Richard and Ellen Anthony to live with them. There are other African-American Anthonys in southern Campbell County, but in tracing their family trees, none could be found who were related to Ellen or Richard Anthony.


27. Ibid., p.491.


32. Washburn. Peculiar (note 2), p.491. Though some patients charts for this early period of the hospital are available on microfilm, Ellen Anthony's chart could not be located. Anthony's other admissions to UVA Hospital occurred as follows: patient #433 (3/30/08-6/18/08); patient #1567 (4/7/09-6/9/09); patient #2153 (9/8/09-10/10/10); patient #105 (10/25/10-4/11); patient #5077 (8/22/11-11/18/11); patient #6817 (8/10/12-1/15/13); patient #5878 (10/27/13-5/14/14); patient #1271 (10/28/14-4/30/15); patient #12856 (7/3/15-12/15/15); patient #17397 (1/2/17-6/19/17); patient #20784 (1/26/18-2/18/18); patient #21760 (5/14/18-6/27/18).


35. Marquis MP. Sickle cell anemia: a composite study and survey. Medicine 1951;30:360-61; Conley. Sickle-cell anemia—the first molecular disease (note 3), p.322. Thanks to Daniel Mohler, MD, of Charlottesville, for first relating this story to me. No records of this incident are extant at either the University of Virginia or the Johns Hopkins University archives.


41. Ibid., p. 492.

42. Herrick. Peculiar (note 1).

43. Washburn. To Every Thing (note 6), p. 135.


45. Washburn. To Every Thing (note 6), p.125.

46. See masthead of the journal for Davis' name as a member of the editorial board.

47. On page 492 of his Virginia Medical Semi-Monthly article (note 2), Washburn provides the results of a blood examination dated January 8, 1911.


50. Washburn. To Every Thing (note 6), p.132.


52. Ibid., p.493.

53. See note 32 for a list of those admissions.


56. On the history of this era, see, for example, Shryock RH. The Development of Modern Medicine: An Interpretation of the Social and Scientific Factors Involved. Madison: University of Wisconsin Press, 1979 (originally published 1936).


60. For more information on Walter Clement Noel, see Saviit and Goldberg. Herrick's 1910 Case (note 3).