A GOOD-HEARTED MAN

by

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Over the period of two hundred years our city of Chicago has grown from a frontier mud hole to a world metropolis. This extraordinary development did not occur in obedience to some inner law, like the unfolding of a flower. Rather, it was the result of the efforts of thousands of energetic, focused men and women. Some of them are well-known historical figures. Many are not. Contributions have been made in a variety of enterprises: banking, railroad management, meat packing, manufacturing, architecture, retail trade, and on and on. To this list one must add the field of medicine. Late in the nineteenth century and early in the twentieth an extraordinary group of physicians, surgeons, and basic scientists located in Chicago were able by their achievements to participate in the growth of the field of medicine. This discipline developed from the empirical practice of the early nineteenth century to medical science as we know it today. One of the leaders in this modernizing achievement was a Chicago physician, James Bryan Herrick. His story—and the reasons for our indebtedness to him—constitute the subject of this paper.

James Herrick was born in Oak Park, Illinois, in 1861, the year of Lincoln's inauguration, of the attack on Fort Sumter,

and the Battle of Bull Run. His childhood and youth were spent in Oak Park in an atmosphere far removed from the drugs, gang violence, and Internet girlie shows, which threaten the innocence of young Americans in the early twenty-first century. When he was eighteen, according to his autobiography, he used the word "damn" for the first time, referring to a contemporary as a "damned rascal." Otherwise his youth was unsullied by profanity or other bad habits.

In 1877 Herrick and two other boys graduated in the first class ever sent from Oak Park High School. In 1882 he graduated with a bachelor's degree from the literary department of the University of Michigan. At that point his father thought it wise that the young man teach for several years before committing to a life's work, and accordingly James taught Greek and Latin, first at Peoria High School and then at Oak Park High. We note the influence that fathers were able to exert on their sons' choice of life path in the 1880s. This form of paternal power has largely disappeared.

Herrick had always been interested in natural history. As a boy, when one of his pet rabbits died, he made "what might be called a post-mortem examination and concluded that death was due to the claws and teeth of the cat."[1] During the last two years of college he took courses in chemistry and biology. These prepared him for possible admission to medical school. As his high school teaching career wore on, he became more and more convinced that he wanted to be-

1. James B. Herrick, *Memories of Eighty Years* (Chicago: University of Chicago Press, 1949), 31.

come a doctor. Originally he thought of attending the medical school (now Northwestern) headed by Nathan S. Davis, but before making a final decision he elected to consult the family physician, Dr. John W. Tope. Here is the conversation, as reported many years later by Dr. Herrick:[2]

"I went to [Dr. Tope] for his opinion and got it, straight from the shoulder.

"'I suppose, Dr. Tope, I ought to go to N. S. Davis' school; he is, I believe, the leading surgeon in Chicago.'

"Dr. Tope nearly hit the ceiling at my ignorance. 'N.S. Davis the leading surgeon! He isn't a surgeon at all. He's not even a leading physician. Now, see here, you go to Rush College.'

"'Where is that?' I asked innocently.

"'Why, on the west side near the County Hospital.'

"'County Hospital? I never heard of it.'

"'Never heard of the County!' Dr. Tope proceeded to enlighten me in no uncertain terms.

"I matriculated at Rush on June 13, 1885, and believe I made a wise choice."

Rush Medical College had been founded in 1837 by Daniel Brainard, a young physician from the East. Throughout the nineteenth century the school had survived and prospered. Like most of the medical colleges in the United States at that time, it was a proprietary institution, owned and managed by the doctors on its faculty. It granted the degree of doctor of medicine after two short years of twenty weeks each, although opportunity for additional work was

2. Ibid., 38-39.

offered by an optional spring course of ten weeks. Most of the instruction was in the form of lectures. Clinics were also held in a large amphitheater. Ward teaching of the clinical specialties was unknown.

We have said above that Herrick's career spanned the period in which the old empirical medicine of the nineteenth century gave way to the scientific medicine of the twentieth. In this development Herrick was an important participant. Some idea of the base from which he started might be given by short descriptions of several teachers at Rush during his medical schooling there, as reported by Dr. Herrick in his autobiography:[3]

Dr. J. Adams Allen was president of the college and professor of medicine. In his course work he "rarely discussed the symptoms or diagnosis or treatment of any specific disease." Rather he emphasized such general causes as humors and temperaments. The importance of weather in initiating disease was not neglected. He did not believe in bacteria as causative agents of disease.

Moses Gunn, the professor of surgery, withheld judgment on microbes, but he went as far as to soak his sutures in carbolic acid, just in case these little devils might be present. Like many men who had been army surgeons in the Civil War, he had had extensive experience with fractures and wound surgery.

Joseph P. Ross was professor of diseases of the chest. He was a powerful figure in Chicago politics but not very well

3. Ibid., 48-55.

informed about medicine. The students used to mimic him: "Gentlemen we will now discuss the pathology of tuberculosis. There are two kinds of tubercles, the gray and the yellow. We now pass on to the symptomatology of the disease."

These and the other teachers at Rush in the 1880s were rooted in a form of traditional medical practice which was rapidly passing. The use of anesthesia in surgical operations had been established, but—as noted above—the importance of avoiding bacterial infection during surgical procedures was just beginning to be understood. Infectious diseases such as tuberculosis, typhoid, diptheria, and pneumococcal pneumonia were common. Their causes—and methods of effective treatment—were unknown. Doctors dispensed traditional medicines, held the patient's hand, and hoped for the best. After all, Chicago was half a continent and a whole ocean away from the European centers, where most of the progress in medicine was being made. It took time for the newer knowledge of medical science to percolate through to the American Middle West.

Herrick had one quality which many of us find irritating: he generally wound up scholastically at the top of any class he was in. So it was at Rush, where he was valedictorian of the Class of 1888. After medical school the more ambitious students took a year and a half of internship. "The outstanding training school for recent graduates from the medical colleges of Chicago was the Cook County Hospital."[4] In the competitive examination for an internship in the Cook

4. Ibid., 58.

County Hospital, Herrick placed number one. Shortly thereafter he started an eighteen-month term as a County intern.

Early in Chicago's history it became apparent that the city would need a hospital to care for the indigent sick. Initially this need was fulfilled by a series of poor houses. Then, shortly after the close of the Civil War, the first Cook County Hospital, known later as "the old County Hospital," opened at Eighteenth and Arnold Streets, on the near southwest side. From the beginning it was staffed by doctors from the faculty of the Rush Medical College. These attending physicians were unpaid volunteers. Also from the beginning County Hospital initiated a program of internships for young physicians who had just graduated from medical school and who wanted to obtain practical experience under supervision of more experienced physicians. These were the first internships available in the city of Chicago. They were regarded as highly desirable and attracted the cream of the graduating classes of the medical schools.

By the 1870s it had become obvious that the original County Hospital building was not suitable for the work that needed to be done. In 1874 (the year of the founding of the Chicago Literary Club), the commissioners bought twelve acres at Harrison and Wood Streets. This time the hospital was planned with care by the architect John C. Cochrane. When it was finished, two years later, it was described "as one of the best planned hospitals in the United States."[5]

5. John G. Raffensperger, *The Old Lady on Harrison Street—Cook County Hospital, 1833-1995* (New York: Peter Land, 1997), 42.

Even with a new building the graft and political patronage associated with County Hospital went on unabated. So did the opportunities for hands-on practice and learning by the interns. Two pictures in John Raffensperger's history of the County Hospital show Dr. Herrick. In one he is standing properly dressed as one of the twelve interns in the 1887-88 County house staff. The other is a photograph of an operating room taken while a leg was being amputated. Dr. Herrick—an intern—has the scalpel in his hand and is doing the job as surgeon. He and the other participants wear white gowns, but no one wears a mask, and all work with bare hands. The patient lies prone on a bare table. He is receiving ether by the drip method. This was the school in which Herrick learned his trade.

We have said that appointments to the County attending staff in that era were made by political favoritism. After his internship Dr. Herrick was appointed to the medical staff of the County Hospital on January 1, 1890, through the influence of Mr. O. D. Allen of Oak Park, who was on the Board of Cook County Commissioners. Herrick thereafter sent an annual note of thanks and a box of cigars to his sponsor. At the time of his appointment he was twenty-eight years old.

In that era it was customary for a young physician getting started to join the practice of an older man. Herrick followed this route by signing up as the understudy of Dr. Charles Earle, a general practitioner in Oak Park. Having a professional position and income allowed him to marry Miss Zellah P. Davies of Oak Park, to whom he had been engaged since the beginning of medical school. We note that his autobiography, pub-

lished when he was eighty-eight years old, is dedicated to his wife, Zellah Herrick, with whom he enjoyed a life-long partnership.

After a year as assistant to an older physician Dr. Herrick elected to go it alone as a general practitioner at California and Warren, on the west side of Chicago. It's interesting to review some of the conditions treated or procedures performed by this young recent graduate in the 1890s: tonsillectomy, amputations of the leg, and the management of scarlet fever, diphtheria, epilepsy, miscarriage, fractures of the long bones, childbirth, pneumonia, and foreign bodies in the eye. That was a simpler era in which most doctors did almost everything.

In 1894, however, Herrick experienced a revelation that changed his life and helped make him into the world-famous figure which he became in his later years. He determined that he needed to study in Europe. This decision requires some explanation.

In the early part of the nineteenth century those few American physicians who elected postgraduate study abroad largely went to France. A generation of American physicians, largely from the East Coast, studied with Pierre Louis in Paris and brought his methods of clinical observation back home. After the Civil War, however, the center of progress in scientific medicine had shifted to the German-speaking countries: Germany itself, the Austro-Hungarian Empire, and Switzerland. Physicians who visited centers in those countries saw a new kind of medical science in which laboratory investigation provided the background for clinical practice. Visitors from America appreciated "the uniformly high standards, the excitement of doing original work, the freedom enjoyed by the

scientist, the unity of research and teaching, the advanced degree of specialization, and the superbly equipped laboratories that were led by men on the frontiers of medical science."[6]

Originally most of the Americans studying in Europe in this period came from the East Coast. At Würzburg in central Germany out of 185 Americans who studied medicine there between 1870 and 1914, only four hailed from the former Confederate states; while forty-nine were from New York City alone. As the century wore on, Berlin and Vienna became the favorite goals of American doctors seeking training in a medical specialty or in the basic methods of laboratory research. Many of these visitors were surprised by the friendly reception which they encountered in the universities of Central Europe. The numbers are astounding: "No fewer than ten thousand Americans took some kind of formal medical study in Vienna between 1870 and 1914."[7] During this period the leadership in American medicine passed to men who had studied abroad. This pattern stopped with the onset of hostilities in Europe in 1914 and never started up again.

Dr. Herrick responded to these impulses to study in Europe. In 1894 he withdrew from his general practice for three months and headed for Prague with his wife and two-year-old daughter. The trip was a complete success. The young American doctor was received cordially by Professor

6. Thomas Neville Bonner, "The German Model of Training Physicians in the United States, 1870-1914: How Closely Was It Followed?" *Bulletin of the History of Medicine* 64 (1990): 19.

7. Thomas Neville Bonner, *American Doctors and German Universities* (Lincoln, Nebraska: University of Nebraska Press, 1963), 38.

Chiari, the head of pathology in Prague, and was invited to work in his laboratory. Here Herrick had an opportunity to observe the methods and attitudes which had made Central European medical science so well-regarded. Even as a traveling American student he was encouraged to go to work in the pathology laboratory. At one time during Herrick's stay Chiari and his team were asked to investigate an outbreak of trichinosis in Teplitz, a town a few miles north of Prague. To Herrick was assigned the job of looking for the little trichina worms in some sausage as well as in certain muscles from one of the patients. After a false start he ultimately ran into many nests of young trichina in the muscles. To quote Herrick, "The zeal and thoroughness with which this evidence was worked up, the emphatic way in which Chiari laid down the rules by which the disease was to be stamped out in Teplitz, the accurate and thorough method by which it was studied, revealed the energetic nature of this true scientist."[8]

In all the Herricks made seven trips to Europe. On each one Dr. Herrick took the opportunity to learn something of the work which was being done by medical people in England and on the Continent. These experiences helped him to develop himself into a leading physician in the still somewhat backward medical world of Chicago.

In 1900 Herrick left primary-care practice and repositioned himself as a consultant in internal medicine, working primarily out of Presbyterian Hospital. He still retained his position on the attending staff of County Hospital and

8. Herrick, *Memories,* 112.

continued to teach medical students in both institutions as a professor of medicine at the Rush Medical College.

In December 1904 Dr. Herrick examined a patient at the Cook County Hospital who presented a series of puzzling findings. He was a twenty-year-old male of African descent who had recently come to Chicago from Grenada in the West Indies to study in one of the professional schools. For about a year he had noticed shortness of breath and palpitations of his heart. Also a yellowish discoloration of the whites of his eyes. On his legs were a series of ulcers, some fresh and some old and healed by scarring. The patient was mildly feverish. Examination of his blood showed a moderate anemia. The striking findings were found on the blood smear. The red corpuscles, which ordinarily are uniformly round in conformation, were in many cases elongated and thinned to what Herrick described as "sickle-shapes."

Originally Herrick and his colleagues thought the young man might be suffering from syphilis, but there was no history of that disease. The diagnosis to them was quite puzzling. The patient did well under a regimen of rest, nourishment, and syrup of the iodide of iron. Herrick and his associate, Dr. Irons, saw this patient several times again over the next several years. The young man gave a history of recurrent exacerbations of his disease. After February 1907 he disappeared from view. Three years later, in 1910, Herrick published an account of this case in the *Archives of Internal Medicine*.[9] The

9. James B. Herrick, "Peculiar Elongated and Sickle-shaped Red Blood Corpuscles in a Case of Severe Anemia," *Archives of Internal Medicine* 6 (1910): 517-21.

article includes beautiful photomicrographs, which show very clearly "the peculiar elongated forms of the red corpuscles." Herrick had given the first description of the disease that is now known, following his lead, as sickle cell anemia.

Sickle cell anemia is a common and important disease of the African-American community in the United States. It has been estimated that there are at the present time fifty thousand to sixty thousand patients with this condition living in our country. In Africa one hundred twenty thousand babies with sickle cell disease are born each year.[10] Africans first landed in North America in the seventeenth century. It is simply amazing that no one had made the appropriate observations and described this condition until it fell to a scientifically oriented Chicago physician to do so early in the twentieth century. In addition to its importance as an affliction of large numbers of our fellow citizens, sickle cell anemia occupies an important place in our understanding of human biology. Hemoglobin is the material in the red blood corpuscles that is responsible for the transport of oxygen. In 1949 Linus Pauling and his colleagues showed an abnormal pattern of migration of sickle cell hemoglobin under the influence of an electrical current, thus demonstrating different chemical characteristics between normal and diseased tissues at a molecular level. Later it has been shown that this abnormal hemoglobin is the result of the substitution of one amino acid, valine, for another, glutam-

10. *Cecil—Textbook of Medicine,* 21st ed., edited by L. Goldman and J. C. Bennett (Philadelphia: W. B. Saunders Co., 2000), 894.

ic acid, in the hemoglobin molecule. So, not only did Herrick—using simple laboratory means—recognize for the first time an important human disease, but he also uncovered a condition which has served as a model for our understanding of human disease at the molecular level.

Shortly after publishing his important paper on sickle cell anemia Herrick made some equally significant observations in the field of heart disease. All of us have heard about "heart attacks." This is a vague expression which may refer to any sudden illness or shock that might be related in some way to the heart. However, as the term is ordinarily used it means a physical collapse secondary to sudden obstruction of one of the arteries that nourish the human heart muscle, the coronary arteries. Technically, this condition is called coronary thrombosis with myocardial infarction.

The existence of coronary thrombosis had been known for many years, but it had been thought to be a rare pathological curiosity and uniformly fatal. Prior to Herrick's studies, many patients whom we now recognize as having suffered from blockage of the arteries of the heart were given some such diagnosis as acute indigestion. In 1912 Dr. Herrick reported to the medical community a series of patients who had suffered heart attacks, who lived for varying periods after the attack, and whose illness was subsequently found on postmortem examination to have been caused by obstruction of a coronary artery.[11] In other words, he iden-

11. James B. Herrick, "Certain Clinical Features of Sudden Obstruction of the Coronary Arteries," *Transactions of the Association of American Physicians* 27 (1912): 100.

tified for the first time coronary thrombosis as an insult from which one might survive and for which one might be treated. This was no small matter. At the present time in the United States coronary artery disease afflicts some seven million Americans and kills more than five hundred thousand annually. Many suffer a "heart attack" and survive. In recent years, due to improvements in treatment, survival from heart attacks has become much more common and the death rates have fallen.

Throughout the nineteenth century European physiologists had gradually improved the design of sensitive instruments that could detect the small electrical currents in the heart. In 1842 Carlo Matteucci, professor of physics at the University of Pisa, showed that an electrical current accompanied each heart beat. Subsequently a series of observations by British and Continental scientists confirmed the reality of this phenomenon and recorded the current produced with greater precision. However, it was left for the Dutch scientist Willem Einthoven to devise the string galvanometer, the first clinically useful instrument to measure electrical current coming from the heart muscle. He published his first electrocardiogram in 1902. In 1924 he received the Nobel Prize for having invented the electrocardiograph.

After Dr. Herrick published his initial paper on the clinical manifestations of thrombosis of the coronary arteries in 1912, he started looking for a way in which this phenomenon might be demonstrated during life. It was well known that Einthoven's electrocardiogram was useful for recording abnormalities of the rhythmic motion of the heart but

no use had been made of it to demonstrate injuries to heart muscle. At Dr. Herrick's suggestion, a young physician on the Rush and Presbyterian Hospital staff, Dr. Fred M. Smith, began experimentally ligating the coronary arteries of dogs. He recorded their electrocardiograms before and after experimental blockage of the coronary arteries and was able to show characteristic electrocardiographic patterns associated with this insult to the animal's heart. Dr. Herrick was closely associated with this work.[12] Finally in 1918 Herrick read a second paper on heart disease before the Association of American Physicians. This time he was able to show more clearly than before the association of the typical clinical findings of coronary thrombosis with findings of this condition in the hearts of his patients at autopsy. In one case, Patient Number III, he not only demonstrated the autopsy findings of coronary thrombosis but also showed electrocardiographic findings similar to those recorded by Fred M. Smith in his experimental animals. As you read the papers you can sense these people feeling their way toward clinical and laboratory procedures which now are basic in the study of the patient with heart disease. Parenthetically, while Herrick's original 1912 talk before the Physicians elicited little interest, his second talk was a blockbuster. People finally recognized that they were witnessing a major transformation in our understanding of diseases of the human heart.[13]

12. Fred M. Smith, "The Ligation of Coronary Arteries with Electrocardiographic Study," *Archives of Internal Medicine* 22 (1918): 8-27.

13. James B. Herrick, "Concerning Thrombosis of the Coronary Arteries," *Transactions of the Association of American Physicians* 33 (1918): 408.

Each one of Herrick's three major achievements (identification of sickle cell anemia, description of the clinical findings of coronary thrombosis, and clinical use of the electrocardiogram in coronary heart disease) followed the same pattern. A clinical observation was elucidated by low-tech laboratory means: in the first case the microscope, in the second autopsy, and in the third the electrocardiogram. You can see how far this method was from the medicine of humors and temperaments of Herrick's teachers in medical school and how close to that of the Central European scientists with whom he studied in his trips to the Continent. Along with Herrick, leaders in American medicine were moving away from tradition toward measurement and the laboratory. The product is medical science as we know it today.

In all, J. B. Herrick gave eleven papers at meetings of the Chicago Literary Club. At the Ladies' Night meeting in 1939 he gave a paper entitled *The Story of a Good Boy.* Do you suppose that this was autobiographical? His Presidential Address in 1931 was called *Castromediano, a Forgotten Patriot and Martyr of the Italian Risorgimento.* In 1924 he read a paper to the Club entitled *Why I Read Chaucer at Sixty.* Ten years later he read the same paper, now called *Why I Read Chaucer at Seventy,* to the Association of American Physicians at their annual meeting in Atlantic City, and the circumstances of its presentation tells something of the degree to which Herrick surpassed some of his colleagues in personal culture. Mrs. Sewell, wife of Dr. Sewell of Denver, overheard two younger doctors discussing the program of the society. "What's on at

the association tonight?" said one. "Oh, their annual dinner with a paper by Dr. Herrick of Chicago." "What's his subject?" "Subject? *Why I Read Chaucer at Seventy.*" "Well," said the questioner, "I know who Dr. Herrick is, but who the hell is Chaucer?"[14]

I met Dr. Herrick once. He had retired from practice by the time I started my internship at the old Presbyterian Hospital in the middle 1940s. However, one day, as I was busy on the wards of the hospital, I looked up and saw this small older man with a pointed beard being escorted among the beds by several very respectful attending physicians. It was J. B. Herrick on a visit to a patient who had formerly been on his service. I was introduced and he said a few kind words. He and Mrs. Herrick had been friends of my grandparents. He then passed on—into history—as a great physician and as one of the builders of our city of Chicago.

14. Herrick, *Memories,* 209.

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