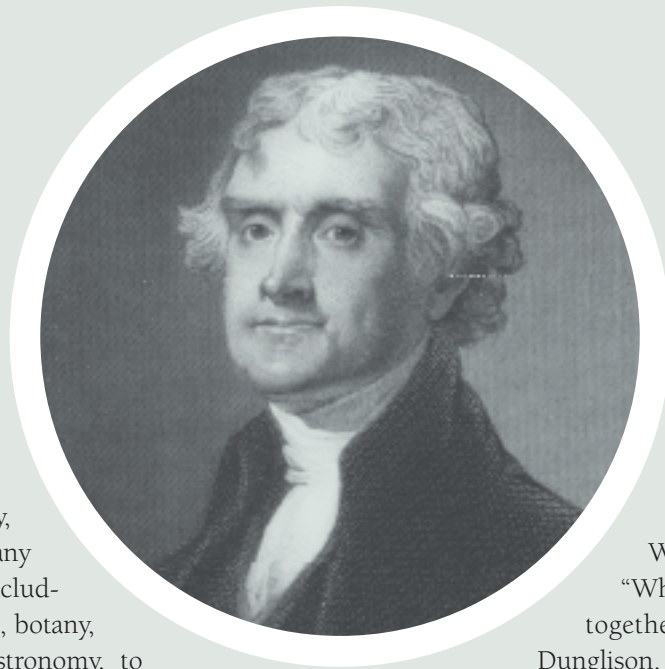


Two Centuries of Leadership

1828

Thomas Jefferson and the Medicine of His Day

BY WHITE MCKENZIE WALLENBORN, M.D.



Thomas Jefferson, truly a man for all seasons, was deeply involved in medicine. How he found time for this interest is truly amazing considering that he spent over 35 years in service to our young country, and put much effort into his many other fields of expertise, which included architecture, scientific farming, botany, archeology, paleontology, and astronomy, to name but a few.

As a young man, he developed strong opinions about health and exercise. During his long and productive life Thomas Jefferson promoted some early advances in preventive medicine, worked toward better public health in Virginia and in the nation, and—with his creation of the Medical School at the University of Virginia—had a profound effect on how medicine was taught all across the United States.

Jefferson's influence was evident despite his suffering from

some unique maladies, and despite his holding strong, negative opinions about doctors and how medicine was practiced at the time. "The state of medicine is worse than that of total ignorance," he wrote to William Green Mumford in 1779.¹

"Whenever I saw three physicians together," Jefferson told Dr. Robley Dunglison, "I looked up to discover whether there was a turkey buzzard in the neighborhood."² To

Caspar Wistar, M.D., he wrote in 1807: "Presumptuous bands of medical tyros, let loose upon the world, destroy more human life in one year than all the Robin Hoods, Cartouches, and MacHeaths do in a century."³

Although he mistrusted most physicians, he did have faith in a few: Dr. George Gilmer of Pen Park (father of Francis Walker Gilmer whom Jefferson sent to England to recruit faculty for the University of Virginia); Dr. Thomas Walker,

WHILE SURGERY IS SEATED IN THE TEMPLE OF THE EXACT SCIENCES, MEDICINE HAS SCARCELY ENTERED ITS THRESHOLD. THEIR THEORIES HAVE PASSED IN SUCH RAPID SUCCESSION AS TO PROVE THE INSUFFICIENCY OF ALL AND THEIR FATAL ERRORS ARE RECORDED IN THE NECROLOGY OF MAN.

THOMAS JEFFERSON TO JOHN CRAWFORD, 1812

who had been Peter Jefferson's physician and is recognized for his original description of a new treatment for osteomyelitis;⁴ Dr. Benjamin Rush of Philadelphia; and Dr. Robley Dunglison, first Professor of Medicine at the University of Virginia. However, his lack of confidence in other physicians was not complete because, when he consulted them, he would carefully follow their advice and take their prescribed medication.

Without doubt, Thomas Jefferson was a man of the Enlightenment. "To the men of the Enlightenment," wrote Bernard Bailyn, "their age was like the dawn of a new day in humanism, rationality, scientific methodology, and religious toleration, after a long night of superstition, intolerance, and misery."⁵ Mr. Jefferson believed that there was a rational explanation for all phenomena and clearly felt that medicine was still in that "long night of superstition, intolerance, and misery."

Very early in his political career he began to take steps to correct this serious situation. After he was elected Governor of Virginia, he effected a change in the faculty at the College of William and Mary (c. 1779-1780) that initiated the first school of medicine in Virginia. This predated the establishment of Harvard Medical School by about three years. Unfortunately, Dr. James McClurg—the first Professor of Anatomy, Medicine, and Chemistry—resigned after four years and the medical school at William and Mary expired.⁶

As a young adult, Mr. Jefferson had developed an interest in the exciting possibilities of preventive medicine. While a college student at William and Mary he traveled, with some difficulty, from Williamsburg to Philadelphia to be vaccinated (or inoculated) against smallpox by Dr. William Shippen. This vaccination most likely comprised the live virus made from the pustules of smallpox-infected patients.⁷ (Edward Jenner's cowpox vaccine was not readily available until after 1798.)

Smallpox was a deadly disease in those days, able to wipe out entire

slave populations, eradicate Indian tribes, and debilitate large armies. During the Revolutionary War, for example, British General Charles Cornwallis captured Jefferson's Elk Hill farm on the James River and took the slaves to Yorktown where almost all of them died from smallpox.

Jefferson, during this period, began working to improve public health. As governor of Virginia Jefferson voiced concerns with the improvement of sanitation, ventilation, water supplies, and disease prevention. Some years later he collaborated with Dr. Benjamin Waterhouse to develop a program of national vaccination.⁸ Twenty years after the Revolution, Mr. Jefferson ordered Jenner's smallpox vaccine, and personally vaccinated his family and slaves at Monticello.⁹

THOMAS JEFFERSON ABROAD

Jefferson further pursued his interests in medicine, public health, and architecture while serving as Minister to France from 1784 to 1789. At that time in France, significant hospital design changes and preventive medicine programs were underway. Thomas Jefferson actively participated with many of his French peers in these efforts.

The d'Hotel-Dieu in Paris, a death-trap of a hospital with a 20-30% mortality rate, is a perfect case in point. Its situation was simply appalling. The hospital was in an unhealthy location, held a crowded mass of 3,000 patients—four to six patients to a bed—and mixed diseases in the same wards and beds. Additionally, it was an unsafe environment—a potential fire hazard—providing insufficient and contaminated water to its unlucky inmates. The Paris Academy of Sciences recognized it as a source of contagion with its vitiated air, and pollution of the city water supply, and took the lead in bringing about much-needed hospital reform.¹⁰

Thomas Jefferson was a very close friend of two of the men associated with the planning for these changes by the Paris Academy of Sciences, the Marquis de Cordocet and Pierre Samuel DuPont de Nemours (a Physiocrat and physician).¹¹

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Hospitals, thereafter, were to become “healing machines” for patient-citizens by the changing of their location, design, and operation. The new hospitals were to be of pavilion, or isolated-ward, design where patients could be segregated by disease and placed in separate beds. They were to be places where innovations in physics, chemistry, pathological anatomy, surgery, medical technology, sanitation, architecture, and hospital administration would be practiced.

Louis XVI ordered the construction of four such new hospitals. Each held 1,200 patient beds organized in twelve symmetrically parallel pavilions aligned along a main axis—six on either side of an open garden, with a central chapel building at its head—connected by covered walkways for convalescent patients. This design provided for improved ventilation, economy of space, efficiency, cleanliness, and safety, and, at the same time, reduced the risk of fire and contagion.

Figures 1, 2, and 3 clearly show how Thomas Jefferson’s plans for the academical village of the University of Virginia resemble the new hospitals in France. In an April 2, 1816, letter to Governor Wilson Cary Nicholas of Virginia, Mr. Jefferson states that for his own academical village, he selected the village form rather than one large building “for reasons of fire, health, economy, peace, and quiet.”¹²

The new “healing machines” were an improvement in public health, but DuPont’s ideas carried the matter one step further. He felt that dehospitalization of disease and poverty, by medical assistance at home, was healthier, cheaper, and more humane than hospital care.¹³ Thomas Jefferson concurred. In his “Notes on the State of Virginia” (first published in May of 1785), Jefferson described the parish relief system of his state as the most effective, inexpensive, and compassionate scheme of self-help and home care. “Parish assistance and household relief by friends and neighbors is, without comparison, better than in a hospital,” he wrote, “where the sick, the dying, and the dead are crammed together in the same rooms, and often in the same beds. Nature and kind nursing save a much greater proportion in our own plain way at a smaller expense, and with less abuse.”¹⁴

JEFFERSON AND THE TEACHING OF MEDICINE

Formal medical school education in the American colonies had its beginnings in 1765 with the formation of a medical department at the College of Pennsylvania. By 1820 there were thirteen medical schools in the United States.¹⁵ Medical school in those days, consisted of two years, with two four month terms, followed by several years of preceptorship.

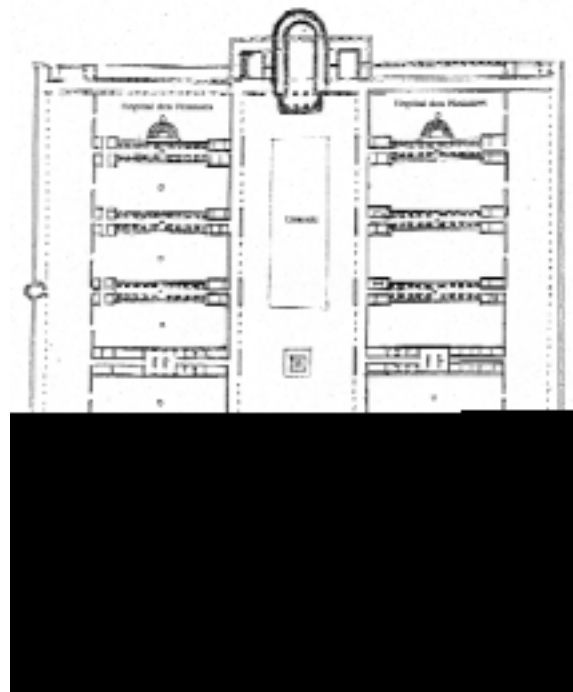


Figure 1: Plan for a hospital (d'Hotel-Dieu) in Paris.



Figure 2: Elevation Lateral (top) and Elevation Generale (bottom) of de M. le Roy's projet d'un Hotel-Dieu.

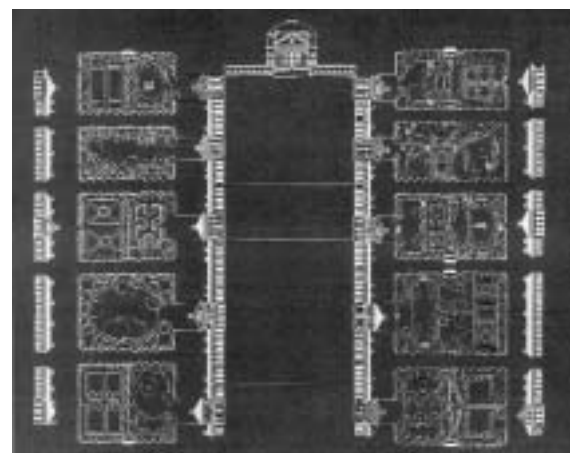


Figure 3: University of Virginia Academical Village as drawn by Mary Hall Betts from Thomas Jefferson's original plans.

REPRODUCED BY PERMISSION OF BETSY BETTS LANG

Todd Savitt, writing for the *Virginia Medical Monthly* in 1995, quoted Thomas Jefferson's June 21, 1807, letter to Dr. Caspar Wistar saying that he believed medical school instructors based their teachings too much upon speculative theories and too little on the realities of medical practice. Mr. Jefferson designed the medical curriculum at the University of Virginia to avoid these problems, and to fit the needs of a mostly rural American population.

He insisted that medical theory be taught as an historical subject only, and ordered instruction to concentrate, rather, on the practical, fundamental problems of medicine. Under his system, no one would graduate from the University of Virginia as a physician.¹⁶

This was to change, however, as the first four degrees conferred by the University, in 1828, were Doctor of Medicine degrees. (Incidentally, in 1831 one of Jefferson's grandsons, Benjamin Franklin Randolph, graduated from the University of Virginia as a Doctor of Medicine. One of the founders of the Martha Jefferson Hospital, in Charlottesville, Dr. William Mann Randolph, was a great-great-great-grandson of Thomas Jefferson.)

What Mr. Jefferson had proposed for the education of medical students was that, after they had qualified themselves within the other branches of science at the University of Virginia, they would then complete their course of preparation by attending clinical lectures for six or twelve months in Norfolk, where the United States already had an established hospital with an ample number of patients.¹⁷

Savitt further noted in his article that Mr. Jefferson argued for the aban-



Jefferson's Anatomical Theater.

donment of hypotheses in favor of sober facts, with the highest value set on clinical observation and the lowest on visionary theory. Thomas Jefferson felt that anatomy and clinical observation were the two major areas of medical education. "The only sure foundations of medicine," he wrote, "are an intimate knowledge of the human body and observations on the effects of medicinal substances on that body."¹⁸

Courses taught in the medical department at the

University—according to the contract between the University and the first Professor of Medicine, Dr. Robley Dunglison—included anatomy, surgery, physiology, materia medica, pharmacy, and the history of the progress and theories of medicine from Hippocrates to the present. The new professor of medicine was allowed neither to have his own private practice, nor to teach clinical medicine, at least not with live patients. Francis Walker Gilmer, who was sent to England to recruit the faculty, encountered difficulty in procuring a professor of medicine when the applicants discovered that they would not be allowed to practice at, or outside, the University. This restriction was later changed by the Board of Visitors so that Robley Dunglison could treat Thomas Jefferson. Dunglison was "permitted to act as a consulting physician elsewhere, so timing these avocations, however, as to not interrupt the regular business of the school."¹⁹

When the University of Virginia enrolled its first students in March of 1825, twenty signed up for medical subjects. The Anatomical Theater, which Jefferson designed, was not yet completed so the first lectures in medicine were held at Robley Dunglison's residence, Pavilion X. (Incidentally, the Anatomical Theater is the only

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AN EARLY AMERICAN PHARMACOPOEIA

Some of the medications that were used by Mr. Jefferson and others of his day—together with their so-called medicinal properties—included: lavender, used for vertigo, palsy, tremors, and disorders of the head, nerves, and uterus; thyme, which eased tooth pain, purged the body of phlegm, and expelled wind; chamomile—a beneficial tea—which strengthened the stomach, and helped with indigestion and loss of appetite; southernwood (*artemisia abrotanum*), used for worms, and as a purgative; and rhubarb, which was known as a “constipating purge” because it tended to bind the user. Peruvian Bark, or Jesuit’s Bark—which came from the cinchona tree, and of which quinine was the prime ingredient—was very useful for the treatment of pain, fever, headaches, and malaria. The opium derivative laudanum was used for pain, headaches, and diarrhea. Camphor and magnesia were used as purgatives.²⁹

Dr. Benjamin Rush from Philadelphia—a signer of the Declaration of Independence—recommended “Rush’s Thunderbolts” to Jefferson, as well as to Meriwether Lewis and William Clark, for treatment of just about everything. It was a strong laxative—explosive laxative might be more appropriate—made up of the purgatives jalap and calomel (mercurous chloride).

Euthanasia was a subject that did not escape the mind of Thomas Jefferson. Writing to Dr. Samuel Brown of Richmond, Virginia, on July 14, 1813, he suggested that a lethal drug produced from the plant *datura-stramonium*, also known as Jamestown Weed, “if restrained to self administration be made available to individuals wishing to relieve themselves from terminal affliction.”³⁰

Jefferson-designed building that the University of Virginia has demolished—a tragedy.)

In April, 1826, the Board of Visitors passed a resolution stating that: “There be established in the University a Dispensary which shall be attached to the Medical school and shall be under the sole direction and government of the Professor of Medicine who shall attend personally at the anatomical theater, or such other place as he shall notify, from half-after-one to two o’clock on every Tuesday, Thursday, and Saturday, for the purpose of dispensing medical advice, vaccination, and aid in Surgical cases of ordinary occurrence, to applicants needing them. All poor, free persons disordered in body, topically or generally, applying for advice, shall receive it gratis; all others bond or free, shall receive it on payment of a half a dollar at each attendance, for use of the institution, and all persons shall be vaccinated gratis, and the students particularly shall be encouraged to be so, as a protection to the institution against the malady of the smallpox.”²⁰

The idea of a dispensary was apparently a joint decision by Thomas Jefferson and Robley Dunglison. As it developed, the University of Virginia established the first full-time state-supported university medical school clinical faculty in the United States. The comprehensive medical and scientific curriculum planned by Thomas Jefferson—with its emphasis on pre-clinical training and clinical instruction under the close supervi-

sion of medical school faculty—was accepted as the standard for instruction in American medical schools.

“HERE’S TO YOUR HEALTH,” MR. JEFFERSON

“You may promise yourself everything but health,” wrote Jefferson, “without which there is no happiness.”²¹ In July of 1787, he wrote to Thomas Mann Randolph: “The most uninformed mind, with a healthy body, is happier than the wisest valedictorian ...”²² For the most part, Thomas Jefferson was very healthy. Certainly his good health and longevity were related to his personal health regimen.

He was a strong advocate of exercise. As a college student at William and Mary, for example, he would jog precisely two miles every day. As an adult, Jefferson devoted to exercise the hours from one to three p.m. each day. He exercised regularly up to the last few weeks of his life. “Exercise and application,” he wrote to his daughter, Martha Jefferson Randolph, “produce order in our affairs, health of body, cheerfulness of mind, and these make us precious to our friends.”²³

“Exercise is to the body as reading is to the mind” was a frequent Jefferson statement. His commentary on his diet—that he consumed “little animal food, not as an aliment so much as a condiment for the vegetables, which constitute my principle diets”²⁴—indicates that he was a person ahead of his time in healthy eating habits. As to the treatment of illnesses, Mr.

Jefferson felt that nature, if left alone, would restore the natural balance which had been undone by disease. Doctors, he felt, interfered with this restorative process.

Mr. Jefferson partook of neither tobacco nor hard liquors. He discouraged visitors to Monticello from giving toasts after dinner because it encouraged them to drink more than they should. An operator of a Charlottesville boarding house once asked him to recommend beverages for college students and Mr. Jefferson replied that “their drink at all times [should] be water” because young stomachs needed “no stimulating drinks” and he believed “the habit of using them dangerous.”²⁵ Wine, however, was his favorite beverage and his wine cellar probably contained the finest selection of European wines in this country.

Naturally, despite his many healthy habits, Thomas Jefferson did have a few bouts with illness. As a young man, for example he suffered frequently from colds, sinusitis, and bronchitis. Possibly upon the advice of George Wythe—and possibly from reading a book entitled *Baynard on Cold Bathing*—he began, at about the age of twenty-two, to place his feet in a bucket of cold water upon rising.²⁶ “I have for fifty years bathed my feet in cold water every morning,” he wrote to James Maury in 1815, “and have been remarkably exempted from colds (having had only one in every seven years of my life, on average).”²⁷

Jefferson also had severe, debilitating migraine-like headaches from early adulthood until sometime after he retired from politics. When he was serving as minister to France, for example, he was several times hampered by unrelenting headaches that completely disabled him for four to six weeks at a time. Fortunately, he found some relief at home. He painted the walls black in the South Square bed chamber, at Monticello, and would retire to this room when he was afflicted with migraines.

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During his lifetime, Mr. Jefferson injured both of his wrists. He hurt his right wrist in Paris in 1786 when—while trying to impress Maria Cosway—he leaped across a wall, fell and fractured or dislocated it. Many years later, he fell off the North Terrace at Monticello and fractured his left wrist.

In his old age Thomas Jefferson was afflicted with several maladies. Rheumatism, for example, began causing him considerable discomfort in his seventies and this continued until his death. While trying to seek relief from this condition—by using the baths at Warm Springs in 1818—Jefferson developed several boil, or abscess, lesions of his buttocks which caused him great suffering. He had to endure four very painful days traveling home in a carriage. At first he was treated with topical sulfur and mercurials, and later, a mercurial compound by mouth which made him deathly ill. Only when he stopped the treatment did he recover.

In 1819 Jefferson developed a painful swelling in his legs. His slaves, Isaac Jefferson and John Hemings, after bathing him and wrapping his legs, had to carry him in a hand barrow. Fortunately, the swelling did not

hurt when Jefferson could get up and walk but it took, nonetheless, two months for him to recover.²⁸

In October of 1824, about a week before the Marquis de Lafayette was to arrive for an eleven-day visit, Jefferson developed an imposthume, or abscess, of the jaw which was slow to heal and bothered his speech.

As he got older, Jefferson complained of having difficulty hearing when in group conversation. His hearing was adequate, however, when speaking one-on-one. Was this presbycusis, a form of high frequency hearing loss in the elderly, or was it a late complication of having taken quinine, an ototoxic drug, in the form of Peruvian Bark (known as cinchona)? Probably it was a combination of the two. In his latter years, also, Jefferson was forced to rely on glasses, although he

claimed he needed them only at night, or for small print. Apparently he had all of his teeth at the time of his death.

JEFFERSON'S PASSING

Thomas Jefferson died, at age eighty-three, on July 4, 1826, at about 12:50 p.m. This was fifty years—almost to the hour—from the time he had handed the Declaration of Independence to John Hancock for his signature.

What was the cause of his death? It was probably a combination of several disorders. He was rather old and debilitated from rheumatism, and, for several years, he had at times suffered from severe, and unrelenting diarrhea. Also, for at least a year, Thomas Jefferson had had progressive trouble with urinary obstruction most likely from benign prostatic hypertrophy. (Some sources have postulated that Jefferson's ailment was prostatic cancer, but this is debatable.) Dr. Robley Dunglison had to make frequent trips up to Monticello to dilate Jefferson's urethra with a gum-type bougie, and more than likely this caused a significant urinary tract infection. (Thus, the combination of several factors: severe diarrhea, with resulting fluid and electrolyte imbalance and dehydration; a urethral obstruction, along with a significant urinary tract infection; and, finally, being bedridden for about ten

days—during the last three days of which Mr. Jefferson was, for the most part, in a coma—probably caused a terminal postural-positional pneumonia.)

Jefferson's systems failed his once-strong body and he died in bed at Monticello, fittingly, on July the fourth. He had served his nation, and fellow men, well. After his death, the family found his instructions for his tombstone, and its epitaph. "On the faces of the obelisk," he had written, place "the following inscription and not a word more: Here was buried Thomas Jefferson, Author of the Declaration of Independence, Of the Statute of Virginia for Religious Freedom, and Father of the University of Virginia."

"Because of these," concluded his note, "as testimonials that I have lived, I wish most to be remembered." To that we might even add the following: Because of the beliefs and actions noted above, Thomas Jefferson was one of the principals in curing the ills of American medicine. ♦

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FOOTNOTES

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- 2 Recollection by Dr. Robley Dunglison in his Personal Memoranda. Also, Dorsey, John M., "The Jefferson-Dunglison Letters" (Charlottesville: University of Virginia Press, 1960), p. 105.
- 3 Ibid, p. 105.
- 4 Breeden, James O., "The Medical World of Thomas Walker," *The Magazine of Albemarle County History*, Vol. 52, 1994, p. 24.
- 5 Bailyn, Bernard, "Ideological Origins," Personal Notes on Bailyn and Enlightenment.
- 6 Thorup, Oscar A., Jr., Talk to A.O.A. entitled "Thomas Jefferson and Academic Medicine," April 14, 1972 and Malone, Dumas, "Jefferson the Virginian" (Boston: Little, Brown and Co., 1948) pgs. 284-285.
- 7 Malone, Dumas, "Jefferson the Virginian" (Boston: Little, Brown and Co., 1948) p. 99.
- 8 Blanton, W.B., "Medicine in Virginia in the Eighteenth Century" (Richmond: Garrett and Massie, 1931) p. 252, Halsey, R.A., "How the President Thomas Jefferson and Dr. Benjamin Waterhouse Established Vaccination as a Public Procedure" (New York: The Library of the New York Academy of Medicine, 1936), and Malone, Dumas, "Jefferson the President" (Boston: Little, Brown and Co., 1970) p. 185.
- 9 McGlaughlin, Jack, "Jefferson and Monticello" (New York: Henry Holt and Co., Inc., 1988) p. 142.
- 10 Greenbaum, Louis S., "Thomas Jefferson, the Paris Hospitals, and the University of Virginia" *Eighteenth-Century Studies*, Vol. 26, Number 4, Summer 1993.
- 11 This same DuPont de Nemours had been vital in facilitating the 1783 Treaty of Paris that ended the Revolutionary War and was also involved in the negotiations leading to the Louisiana Purchase in 1803.
- 12 Honeywell, "The Educational Works of Thomas Jefferson," p. 78, Letter to Governor Nicholas of Virginia from Thomas Jefferson, April 2, 1861, and Bruce, Philip A., "History of the University of Virginia, 1819-1919" (New York: The MacMillan Co. 1920) pgs. 180-181.
- 13 Greenbaum, p. 613.
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- 15 Savitt, Todd L., "Jefferson's Vision of Medical Education and His Quest for a Professor of Medicine," *Virginia Medical Quarterly*, Vol. 122, Number 4, Fall 1995, pgs. 246-247.
- 16 Ibid, p. 246.
- 17 Ibid, p. 249, Acts of the Virginia Assembly, quoted by Randolph, J.W., "Early History of the University of Virginia," as contained in the letters of Thomas Jefferson and Joseph C. Cabell, Appendix (Richmond, 1856) pgs. 309-311, and Hart, Andrew DeJarnette, "Thomas Jefferson's Influence on the Foundation of Medical Instruction at the University of Virginia," *Annals of Medical History N.S.* 10 (1938) p. 57.
- 18 Savitt, p. 246.
- 19 Dorsey, John M., "The Jefferson-Dunglison Letters," (Charlottesville: The University of Virginia Press, 1960), p. 44.
- 20 Ibid, p. 47.
- 21 Ford, Paul L., ed. "The Writings of Thomas Jefferson" (New York, 1892-1899) Vol. IV, p. 406 and Koch, A. and Peden, W. eds. "The Life and Selected Writings of Thomas Jefferson" (New York: The Modern Library, 1944) p. 426 Letter to Thomas Mann Randolph.
- 22 Betts, E.M., and Bear, J.A., eds. "The Family Letters of Thomas Jefferson" (Columbia: The University of Missouri Press, 1966)
- 23 Extractions from a book: Holmes, John M., "Thomas Jefferson Treats Himself" (Fort Valley: Loft Press, Inc., 1997).
- 24 Koch & Peden, p. 631.
- 25 Ibid, p. 632.
- 26 Dorsey, p. 99.
- 27 Thomas Jefferson Letter to James Maury, June 1815.
- 28 Campbell, Charles, "Memoirs of a Monticello Slave" (Charlottesville: University of Virginia Press, 1951) pgs. 44-45. This malady was, perhaps, one of the following: glomerulonephritis, typhoid fever with phlebitis, tubular damage from his mercurial therapy, congestive heart failure, or parasitic lymphangiitis.
- 29 Betts and Bear (see note 19).
- 30 Holmes (see note 20).