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**PRACTICAL ESSAY**

ON

**TYPHOUS FEVER.**

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1824.

Dr. Nathan Smith's paper, *A Practical Essay on Typhous Fever* (1824), is considered to be an important early work dealing with typhoid fever. Smith saved Joseph's leg with his very advanced techniques in the treatment of bone infections after young Joseph had contracted typhoid fever.

# Joseph Smith's Childhood Illness

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Joseph Smith Jr., prophet of The Church of Jesus Christ of Latter-day Saints, was known for his robust strength and active life. Despite this reputation, he walked with a slight limp, which was the result of a childhood bout of typhoid fever.<sup>1</sup>

Some may be confused by the designation “typhoid fever” because Joseph’s childhood disease was called “typhus” in the October 2002 and November 2005 issues of the *Ensign* and in Church history books by scholars such as LaMar C. Berrett,<sup>2</sup> Dean C. Jessee,<sup>3</sup> Joseph Fielding McConkie, and Craig J. Ostler.<sup>4</sup> Those who have referred to the disease as “typhus” are likely using primary sources and have found that Joseph’s mother recorded the disease as “typhus fever,”<sup>5</sup> and in his own writings Joseph also referred to the illness that almost took his leg and life as “typhus”;<sup>6</sup> however, the disease that ailed the boy Joseph was much more likely to have been typhoid fever. It is not strange that the Prophet and his mother would record his bout with typhoid as “typhus”; until 1850 the terms were used interchangeably because doctors were still learning to differentiate between the diseases.

Both diseases can produce fever, headache, and rash (among many other symptoms), and both have been famous throughout history. Epidemic typhus (*Rickettsia prowazekii*) is a louse-borne rickettsial disease that is most famously known for wiping out Napoleon’s army, preventing their defeat of Russia. It also killed three million people in Eastern Europe and Russia from 1918 to 1922.<sup>7</sup> Typhoid, on the other

hand, is a bacterial infection caused by one of the strains of salmonella—*Salmonella typhi*. It is carried and transmitted by man, and it is spread through contaminated food, water, and soiled bedclothes. One of the most common stories about typhoid concerns Mary Mallon, or “Typhoid Mary,” who was a cook in New York during the early twentieth century. As a healthy typhoid carrier, she infected over fifty people with the disease, five of whom died. After being confined to Long Island for three years, she caused twenty-five more cases at a women’s hospital in Manhattan. Researchers also speculate that typhoid killed more than six thousand Jamestown settlers between 1607 and 1624. In the war against South Africa in the late nineteenth century, British troops lost thirteen thousand men to typhoid, but only eight thousand in battle.<sup>8</sup> Speaking of typhoid fever, Nathan Smith, Joseph’s doctor, noted, “I have not perceived that occupation or habits of life make any difference in their liability to receive this disease, nor has it in this country been confined to the poor and filthy; but affects nearly alike the rich, the poor, and middle classes.”<sup>9</sup> Typhus, on the other hand, is “associated with conditions . . . such as war and poverty, natural disasters such as earthquakes and floods, displacement of populations, jails, and lack of hygiene. [It is] a continued problem in impoverished, louse-infested populations.”<sup>10</sup>

Until about 1837, the words *typhus* and *typhoid* were often used interchangeably for both diseases, even though typhoid has likely been a recognized disease since the time of Hippocrates in ancient Greece.<sup>11</sup> The confusion probably arose because fever and rash accompany both diseases. The Greek word *typhos* means “hazy” or “smoky” and was applied to both diseases due to victims’ high fever<sup>12</sup> and the state of stupor and delirium that often occurred.<sup>13</sup> The fact that in early German medical literature typhoid fever is called “typhus” and typhus is called “Flecktyphus,” further illustrates how naming systems perpetuated confusion between the two diseases.<sup>14</sup> In the United States in 1837, W. W. Gerhard clearly differentiated between typhoid and typhus.<sup>15</sup> Although he presented convincing evidence that they were in fact two separate diseases, many felt that the differences he had described were just variations of the same disease. In London in 1849, William Jenner published his own paper showing how the two diseases differed using both clinical and postmortem evidence<sup>16</sup> and thus “settled the question.”<sup>17</sup> However, at the time of Joseph’s illness and at the time Lucy and Joseph compiled the histories describing it, the nomenclature had yet to be clearly defined.

As the years passed, the two diseases were further classified and understood, and the differences became more easily recognizable. For modern doctors there is clear differentiation between typhoid and typhus. Despite this differentiation, many Latter-day Saint scholars continue to use the term *typhus* to designate Joseph's childhood disease. Others, however, use the correct term, *typhoid*. The Church Educational System manual *Church History in the Fulness of Times* describes Joseph's illness as "typhoid,"<sup>18</sup> as do the books *Our Heritage*,<sup>19</sup> *Teachings of Presidents of the Church: Joseph Smith*,<sup>20</sup> and *Joseph Smith: Rough Stone Rolling*.<sup>21</sup> Joseph Smith is even on a list of famous people ailed by typhoid fever in the Wikipedia entry on the disease.<sup>22</sup> Some members of the Latter-day Saint medical community have noticed the discrepancy. LeRoy Wirthlin has written two excellent articles on Nathan Smith, the famous New England doctor who saved Joseph Smith's leg with his very advanced techniques in the treatment of bone infections.<sup>23</sup> In these writings, Wirthlin always refers to the disease as "typhoid," although the primary documents he uses contain the word *typhus*. He points out that disease was clearly typhoid and not typhus. It is important to note that Joseph Smith experienced osteomyelitis, which does not occur in typhus fever.

The following presents a brief diagnosis using the primary source documents, modern medical literature, and the observations of Dr. Nathan Smith, which are published in what some consider his most important paper, *A Practical Essay on Typhous Fever*, published in 1824. While the title of his paper uses the word "typhous," it is considered to be an important early work dealing with typhoid fever.<sup>24</sup>

Joseph's mother, Lucy Mack Smith, recorded that while the Smith family lived in New Hampshire from 1811 to 1813, all the Smith children contracted the disease presently known as typhoid fever. She writes: "In 1813, the typhus fever came into Lebanon and raged there horribly. Among the rest who were seized with this complaint was my oldest daughter, Sophronia, who was sick four weeks; next Hyrum came from Hanover sick with the same disease; then, Alvin, my oldest, and so on until there was not one of my family left well, save Mr. Smith and myself."<sup>25</sup> The fact that the fever affected only the children in the Smith family is consistent with typhoid fever, which has its "greatest occurrence in young people"<sup>26</sup> and "affects the sexes equally. In endemic areas it shows a predilection for children and young adults."<sup>27</sup> Typhus, on the other hand, generally affects "all age groups."<sup>28</sup> Nathan Smith observed that those who had had the disease often did not get

it again, which may explain why the Smith children were all affected but not the parents.

The fact that the Smith family was residing near Dartmouth College and that Lucy specifically mentions that Hyrum came over from Hanover (the site of Dartmouth) fits well with the following statement from Nathan Smith's paper: "In the autumn of 1812, Professor Perkins, now of New-York, and myself, attended between fifty and sixty cases of typhus in the vicinity of Dartmouth College."<sup>29</sup> This statement of Nathan Smith's is congruous with Joseph's own recollection of the event. When recalling his childhood illness, he states the following: "I endured the most acute suffering for a long time under the care of Drs. Smith, Stone and Perkins, of Hanover." His further descriptions show that he had typhoid: "I was attacked with the Typhus Fever, and at one time, during my sickness, my father despaired of my life. The doctors broke the fever, after which it settled under my shoulder, & . . . Dr. Parker called it a sprained shoulder . . . when it proved to be a swelling under the arm which was opened, & discharged freely."<sup>30</sup> This swelling, or abscess, is indicative of typhoid. The area under the arm is the location of axillary lymph nodes, and the abscess of lymph nodes due to typhoid has been documented, although typhoid infections can also cause abscesses at almost any site.<sup>31</sup> Nathan Smith notes in his essay that with typhoid fever, "it is not uncommon for boils to appear" and that sometimes they would "proceed to suppuration."<sup>32</sup> In contrast, abscess formation is not a commonly documented symptom of those suffering from typhus.

According to modern medical literature, typhoid may also "spread to the bone."<sup>33</sup> This is what happened in Joseph Smith's case. "As soon as this sore had discharged itself, the pain left it and shot like lightning (as he said) down his side into the marrow of his leg bone on the same side. The boy was almost in total despair and cried out, 'Oh father! the pain is so severe! How can I bear it?' His leg immediately began to swell and he continued in the most excruciating pain for 2 weeks longer."<sup>34</sup> The fact that the infection spread to the bone is again indicative of typhoid. One modern text states the following: "focal infections can develop at any site of the body, but these are rare. The most common sites of infection are in the bones."<sup>35</sup> That typhoid can cause infection in the bones is also documented in many other sources.<sup>36</sup> While Nathan Smith does not specifically mention bone infections in his paper on typhoid, he does mention that "in some instances one leg and thigh become enlarged."<sup>37</sup> It is also clear from Dr. Wirthlin's aforementioned articles on Nathan Smith's work as a surgeon that he was involved in

the treatment of bone infections. The sources cited above for typhoid-related bone infections make no mention of bone infections in their sections on typhus.<sup>38</sup>

It is clear that Joseph had typhoid, not typhus, though primary sources call it “typhus” because there was not a clear differentiation between the two diseases at the time. With all the evidence in confirmation of this diagnosis, it is time for historians to refer to Joseph’s childhood illness by its correct designation—typhoid—rather than the historically inaccurate designation of typhus. **RE**

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## Notes

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18. Church Educational System, *Church History in the Fulness of Times*, 2nd ed. (Salt Lake City: The Church of Jesus Christ of Latter-day Saints, 2000), 23.
19. *Our Heritage: A Brief History of The Church of Jesus Christ of Latter-day Saints* (Salt Lake City: The Church of Jesus Christ of Latter-day Saints, 1996), 1.
20. *Teachings of the Presidents of the Church: Joseph Smith* (Salt Lake City: The Church of Jesus Christ of Latter-day Saints, 2007), xiv, 2.
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