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Phyllis Morgan
info@santafetrail.org

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Mosquitoes and Buffalo Gnats on the Santa Fe Trail

by Phyllis Morgan

Among the countless hardships and irritants faced by the people on the routes of the Santa Fe Trail were annoying insects, which included bedbugs, fleas, flies, gnats, lice, mites, mosquitoes, and ticks. Those insects were especially common along the rivers, creeks, streams, ponds and in river bottoms or low places where water collected after summer rains and storms. The pain inflicted on the people by this host of unrelenting pests caused much suffering for a caravan or company, fraying nerves and wearing patience extremely thin.

Animals also suffered greatly from insect bites and stings, causing them to be more recalcitrant and difficult to manage. Author Stanley Vestal described the animals' plight in his book The Old Santa Fe Trail: "Mosquitoes, horseflies, buffalo gnats, kept them twitching and itching, stamping, rolling, and tossing their heads day and night, so that men had to drape spare articles of clothing over the wretched creatures, in order to give them enough peace of mind to graze a little."\(^1\)

In the sweltering heat and sticky humidity of the summer months, in particular July and August, people and animals were nearly driven to madness. Of all the different types of insects, the mosquito and the buffalo gnat were more frequently mentioned in diaries, journals, and letters as the causes of travelers' discomfort and inability to rest their weary bodies and minds after a long day's journey.

In 1804 the Corps of Discovery, co-captained by Meriwether Lewis and William Clark, contended with the dreaded mosquito. In fact, it can be stated with certainty that the members of the expedition found mosquitoes very troublesome. Clark often complained in his journal during late June, July, and August about the annoying pests bothering the Corps as they worked their way up the mighty Missouri River, passing land where, in less than two decades, the dramatic era of the Santa Fe Trail would commence. Remarks from journal entries written by Clark attest to the Corps's problems with mosquitoes ("musquito" was the spelling commonly used in the 1800s):

- **July 27** "I killed a deer in the prairie and found the musquitos so thick and troublesome that it was too disagreeable and painful to continue...\(^2\)
- **July 30** "A great number of musquitos this evening."\(^3\)
- **August 1** "The musquitos very troublesome this evening in the bottom."\(^4\)
- **August 3** "The musquitos excessively troublesome."\(^5\)
- **August 5** "The musquitos very troublesome."\(^6\)

A reader of Clark's journal can almost hear a huge sigh of relief in his entry of August 16: "Every evening a breeze rises which blows off the musquitos and cools the atmosphere."\(^7\) As the Corps of Discovery entered the higher, drier country of the plains, the comments about mosquitoes being troublesome ended. Gnats and ticks also caused much suffering for the men.

Matthew (Matt) C. Field, thespian and writer turned adventurer, included mosquitoes in several of his poems written during July and August of 1839, when he traveled over the famous "Road" with a group of friends and new acquaintances. On July 24, Matt Field wrote an untitled poem devoted mostly to mosquitoes and the agonies they inflict. A part of that poem follows:

> We question not the great design,  
> Or aught that touches things divine.  
> But still should really like to find  
> For what musquitos were designed.  
> Hungry, bloody little creatures—  
> They've no respect for limbs or features.  
> And with their pointed needle noses,  
> They bite us in our evening dozes,  
> We can as easy fly, as Sleep.  
> Our blood to them I think is Brandy  
> They suck it in like sugar candy  
> And they are quick as they are thick,  
> You may kill a hundred at a lick.  
> But who the Devil wants to kill  
> When 'tis our own blood that we spill!  
> And then for every one that dies,  
> A hundred hungry ghosts arise.  
> To beat them off is all in vain,  
> Twice doubled they return again  
> For they are quicker than the light,  
> And thicker—Yes—They darken night!\(^8\)

Although he often saw humor where many others saw little or none, Matt suffered as much as anyone else from those annoying pests. In another poem titled "The Night Camp," he wrote on August 10, 1839:

> Night comes. The evening meal is o'er,  
> Blankets and Buffalo skins are spread  
> Thickly about the grassy floor  
> To form the prairie travellers bed.  
> Mosquito Bars are streched (sic) on stakes,  
> Near rivers, creeks, or swampy lakes,  
> To guard the sleeper from the sting  
> Of tiny foe with buzzing wing.\(^9\)

The "musquito bar," mentioned in this poem and other
terrible as the mosquito was, the buffalo-gnat was considered to be even worse by some people on the Trail. Josiah Gregg described this insect in *Commerce of the Prairies*: "We had also occasion to become acquainted with another species of prairie-tenant whose visits generally produced impressions that were anything but agreeable. I allude to a small black insect generally known to prairie travelers as the 'buffalo-gnat.' It not only attacks the face and hands, but even contrives to insinuate itself under the clothing, upon the breast and arms, and other covered parts. Here it fastens itself and luxuriates until completely satisfied. Its bite is so poisonous as to give the face, neck, and hands, or any other part of the person upon which its affectionate caresses have been bestowed, the appearance of a pustulated varioloid [a person with smallpox]. The buffalo-gnat is in fact a much more annoying insect than the mosquito, and also much more frequently met with on the prairie streams." 17

In his book *Dangerous Passage: The Santa Fe Trail and the Mexican War*, historian William Y. Chalfant wrote about the eventful years of 1846-1848 and described the numerous tribulations faced by the men in General Stephen W. Kearny's Army of the West. The men started out from Fort Leavenworth and marched over the Trail to Santa Fe, arriving there on August 13, 1846. On that day the American flag was raised on the Plaza of the Palace of the Governors, and New Mexico was officially occupied without a battle. During their long march to Santa Fe, the men battled buffalo gnats and mosquitoes: "Once on the plains, misery took new and diverse forms. Swarms of buffalo gnats rose from the grass to harass both men and their animals; and when they reached the Arkansas, great clouds of mosquitoes at-
tacked with a ferocity few men had previously experienced. Hour after hour they stumbled through the unchanging monotony, beset by the stings and bites of insects.\footnote{18}

One of those men was John Taylor Hughes of the First Regiment of the Missouri Mounted Volunteers. He wrote about the bugs assailing the troops as they made their way across buffalo country in July 1846: "... after a hurried march of twenty-five miles, we arrived upon the banks of the Little Arkansas, about ten miles above its confluence with the main Arkansas River. Here the mosquitoes and their allies, the black gnat, in swarms attacked us in the most heroic manner, and annoyed us as much, if not more than the Mexican lancers did at a subsequent period.\footnote{19} The black gnat Hughes referred to was commonly called "buffalo gnat," which is scientifically designated as the black fly. The term "gnat" has long been used for any small fly.

Frank S. Edwards, a Missouri volunteer who marched in 1846 with Colonel Alexander W. Doniphan over the Trail, recalled in his memoir,\textit{A Campaign in New Mexico with Colonel Doniphan}: "We passed on the 8th (August), the Lost Spring, so called on account of the remarkable difficulty in finding the exact spot where it rises. As we were moving out of camp in the morning, a light rain, which had been falling for some time, ceased and the sun shone brightly. The heat of its rays seemed to engender, from every blade of the wet grass, countless myriads of a small insect, bearing some resemblance to a gnat, which covered us and our horses so thickly that the original color of whatever they alighted upon could not be distinguished. Without biting, they got into the nostrils, eyes, and ears, creating a singularly pricking sensation, and making our horses almost frantic with pain. After an hour’s annoyance, a light breeze arose and swept them away.\footnote{20}

Long after Susan Magoffin and Frank Edwards were on the Trail, George W. Hardesty of Missouri headed over the Mountain Route for Colorado in 1878 with his family in mule-drawn wagons. Most of the large wagons carrying freight across Missouri and Kansas had been replaced by the railroad. In June 1878 the rails had advanced to a point west of La Junta, Colorado, where Hardesty found work on a construction crew. Like earlier travelers, he noted the profusion of mosquitoes, writing in his diary on June 12 inside the boundary line of eastern Colorado: "Camped in the river [Arkansas] valley. Mosquitoes annoyed us very much. . . . As for myself they were probably around me but I didn't know anything about it at the time as it generally takes something of more importance than a few hundred mosquitoes to disturb me when I fall to sleep.\footnote{21} Hardesty filed on a homestead in New Mexico Territory in 1879 and remained there the rest of his life.

Those troublesome insects, the mosquito and the buffalo gnat (the black fly), belong to the Order Diptera, comprised of over 86,000 known species of insects. There are over 3,000 species of the mosquito (Family Culicidae) worldwide, of which 174 live in the United States, and about 1,800 species of the black fly (Family Simulium), which are not known to transmit serious diseases in North America.\footnote{22} Of all insects, the mosquito is the most harmful to people as the vector, or transmitting insect, of several of the most serious epidemic diseases in the world. Malaria is the most prevalent and widespread.

The people on the Trail were unaware that infected mosquitoes biting them transmitted the germs, parasites, and viruses that caused such devastating diseases as malaria and yellow fever. In 1880, the year the railroad reached Santa Fe and the Trail began to pass into history, a French army doctor, Charles Laveran, proposed that malaria was caused by a protozoan. A year later, Dr. Carlos Finlay, a Cuban doctor, suggested that infected mosquitoes were the vector in transmitting yellow fever to humans. By 1900, it was confirmed that both diseases are caused by the bite of an infected mosquito. Malaria ("bad air" from Italian \textit{mala aria}) is caused by a protozoan transmitted by the female of a number of species of the genus \textit{Anopheles}. Yellow fever, caused by a virus, is transmitted by the genus \textit{Aedes aegypti}.

Travelers often referred to what was actually malaria as fever or "\textit{ague}.” A variety of treatments were used for fevers, including bleeding and purging the ailing person and administering medicines containing mercury and other harmful substances. Quinine, made from the bark of the \textit{chichona} tree of South America, was found to be effective in treating fevers and malaria, although it was not readily accepted by many doctors, who believed it was a stimulant and would not administer it to anyone. However, some people taking the Trail had heard about the effectiveness of quinine in treating fevers and carried it with them.

A doctor who understood the benefits of quinine was Dr. John Sappington, a resident of the Arrow Rock area of Saline County, Missouri. He preferred quinine sulfate to bleeding, purging, or harmful medicines for patients suffering with fevers. He developed a formula in the 1830s which was sold as Dr. Sappington’s Anti-fever Pills. Susan Magoffin praised those pills over other treatments she had received for fever, most likely malaria. She wrote: "... the chief cure was ‘Dctr. Sappington’s Pills,’ which I must ever eulogize as a medicine of fine qualities. One box of them administered by \textit{mi alma} [my soul, referring to Samuel]
cured me, or at least broke the fever. After great prostration of body I am again creeping about.”

In October 1846, the Magoffins left Santa Fe and headed south to El Paso and then to Mexico. During her stay in Mexico and before her return to the United States, Susan came down with another bout of fever. This time it was the dreaded yellow fever. She survived the disease, but her health had been compromised numerous times during her travels, and she died in 1855 at the age of twenty-eight. Samuel, twenty-seven years her senior, died in 1888 at the age of eighty-seven.

In the preface of their book *Mosquito: A Natural History of Our Most Persistent and Deadly Foe* (2001), scientist Andrew Spielman, Sc.D., and author Michael D’Antonio, stated: “No animal on earth has touched so directly and profoundly the lives of so many human beings. For all of history, and all over the globe, she has been a nuisance, a pain, and an angel of death. The mosquito has killed great leaders, decimated armies, and decided the fates of nations. All this, and she is roughly the size and weight of a grape seed.”

Although the people on the Santa Fe Trail were unaware of the life-threatening dangers of the mosquito, the irony of an insect as tiny as the mosquito causing so much suffering and death would not have been lost on them. Today, the irony is not lost on us that with all our marvelous advances in science, medicine, and technology, the mosquito continues to be an ever-present danger in America and around the world, killing millions of people annually. Our battle with the mosquito is ongoing.

Afterword

The Santa Fe Trail Hikers (1996-2004), led by SFTA member Inez Ross, also experienced some troublesome insects, in particular when we were hiking close to the Missouri River, headed east toward Old Franklin and New Franklin. I especially remember the first day of contact when I heard a familiar, dreaded humming, an ominous sound caused by the beating of tiny wings. Mosquitoes were trying to attack my face and hands. Fortunately, the rest of me was well protected. Reminiscent of Susan Magoffin on the Trail, “It was slap, slap, all the time…” Inez also found ticks in her hair. To my chagrin, I found that I had forgotten to carry insect repellent with me. Please, dear readers, on your summer outings near bodies of water or standing pools of water, don’t forget the insect repellent.

Endnotes


7. Ibid., 51.


9. Ibid., 41.


12-15. Ibid., 31, 33, 33-34, 34.


23. Magoffin, *Down the Santa Fe Trail and into Mexico*, 164.

24. Ibid., xxii-xxiii.


Mosquito image from inhousedesign.blogspot.com/2011/11/anoph- eles-vector-graphic.html, copyright Anne Jennings

Phyllis Morgan’s series of articles regarding animals on the Santa Fe Trail has appeared in previous issues of Wagon Tracks, and can be found online at www.santafetrail.org.

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Funds may be used for supplies and materials; services such as literature searches, computer use, and/or technical assistance; copy fees; and travel. Funds may not be used for the purchase of equipment.

For more information, additional requirements and an application form, visit the SFTA website at www.santafetrail.org. Click on the menu item for Research. The SFTA Scholarly Research Committee will review all applications and awards will be announced on January 2, 2015.