

Fiery Serpents from Numbers Chapter 21

And they journeyed from mount Hor by the way of the Red sea, to compass the land of Edom: and the soul of the people was much discouraged because of the way. And the people spake against God, and against Moses, Wherefore have ye brought us up out of Egypt to die in the wilderness? for there is no bread, neither is there any water; and our soul loatheth this light bread. And the LORD sent fiery serpents among the people, and they bit the people; and much people of Israel died. Therefore the people came to Moses, and said, We have sinned, for we have spoken against the LORD, and against thee; pray unto the LORD, that he take away the serpents from us. And Moses prayed for the people. And the LORD said unto Moses, Make thee a fiery serpent, and set it upon a pole: and it shall come to pass, that every one that is bitten, when he looketh upon it, shall live. And Moses made a serpent of brass, and put it upon a pole, and it came to pass, that if a serpent had bitten any man, when he beheld the serpent of brass, he lived. - Numbers 21:4-9

These verses have long fascinated both believers and skeptics. What were the mysterious "fiery serpents" that God sent to bite the people, causing many of them to die? Well, parasitologists say it may have been the guinea worm (The nematode *Dranunculus medinensis*).

To understand why the guinea worm is suspected, we need to review its life cycle.

Guinea worm larvae are released by their mothers into a body of water. The larvae thrash about vigorously until they attract and are eaten by a copepod, which is a small, nearly microscopic, crustacean. The copepod is, however, just a temporary home for the worm. It cannot complete its life cycle unless it can somehow get inside its definitive host: a human being. This is accomplished when someone drinks water containing the infected copepods.

The copepod's body is destroyed by the stomach acids, releasing the guinea worm, which then burrows its way through the intestinal wall. It begins to migrate through the abdominal cavity and into the connective tissue, stopping along the way to mate with another migrating worm that it runs into along the way. By this time females have grown to be nearly a meter in length, while the males are only a few centimeters. After the worms have sex, the little male wanders off to find a place to die, while the female continues her journey through the human body.

While the migration of the female worms causes great pain and discomfort, it is when the worm reaches its final destination that the torment really begins. The worms end up just beneath the surface of the skin, usually in the legs or feet, where they remain for a month or more. Their metabolic wastes and the host's allergic reaction cause a blister to form, resulting in intense itching and burning pain. One of the few ways to relieve the pain is to immerse the blister in water, inducing the worm to break through the surface of the skin releasing millions of guinea worm larvae. A copepod eats the larvae, completing the guinea worm life cycle.

But the human suffering is far from over when the worm breaks through the skin. For although the female worms die soon after releasing the larvae, their dead meter-long bodies are not easy to remove. And even if the dead worms can be extracted without rupturing, serious secondary infections often occur.

So how is the worm removed? Well, the traditional way, which is still used today, is to carefully wind the worm around a stick. The only other option is surgical removal, but this is extremely difficult and not often successful.

Well, now that was interesting. But were the "fiery serpents" of Numbers 21 guinea worms in disguise? I'll leave that for you to decide, but some aspects seem to fit the description in Numbers.

The pregnant females are rather large worms and cause excruciating pain when breaking through the skin to release their larvae. So it is easy to see how they could be called "fiery serpents".

Guinea worms would have been present in the region at the time of the Exodus, as they still are today.

If the Israelites encountered drought conditions, as they did according to the account in Numbers, it would have facilitated the transmission of the disease by concentrating worm larvae, intermediate hosts (copepods), and infected humans at the same water source.

And the serpent on a pole could well represent the most common form of treatment, then and now: pulling out the guinea worm by winding it on a stick.

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