THE GNAT THAT KILLED TITUS

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On September 13 of the year 81 C.E., Titus, the Roman Emperor responsible for the destruction of the second Temple in Jerusalem, died suddenly at the age of 42. The cause of the emperor's death is a compelling mystery, which several historians have tried to explain. Perhaps one of the most puzzling explanations for his death is recorded in the Talmud in *Gittin* 56b:

"Titus took the *Paroches* and formed it into the shape of a wine-carrier. Then he brought all the utensils of the Temple, and put them in it, [and put them on a ship, intending] to go and be praised [for his triumph] in his city....A storm at sea threatened to drown him [Titus]. He said, 'It seems to me that the power of the G-d of the Jews is only in water. [When] Pharaoh came [against the Jews], He drowned him in the waters [of the Reed Sea]. [When] Sisera came [against the Jews], he drowned him [and his army] in the waters [of *Nachal Kishon*]. [Me] too, He threatens to drown in the waters [of the Mediterranean]. If He is [truly] powerful, let Him come up on dry land and wage war with me!' A heavenly voice emanated and said, 'O evil man, the son of an evil man, a descendant of the evil Esau: I have a puny creature in My world, and it is called a gnat. Go up on dry land and do battle with it.' When he [Titus] ascended to dry land, a gnat came and entered his nose. It picked at his brain for seven years...It was taught in a *Baraisa*: R' Pinchas ben Aruva said, 'I was among the nobles of Rome when he [Titus] died. They split open his head and they found [a gnat] inside it [that was] like a swallow weighing two selas.' A *Tanna* taught in a *Baraisa*: '[The gnat was] like a one-year-old pigeon weighing two *litras*.' Abaye said: 'We hold [a tradition that] its mouth was of copper and its nails were of iron.' "

What caused the death of Titus? While they differ concerning the details of his death, most secular historians agree that Titus died of some illness. Their opinions do not necessarily contradict the opinion of the Talmud. The Maharal, drawing upon the themes of the Talmudic explanation, suggests that Titus died of brain cancer. The power of cellular replication took over a few of the cells of Titus' brain, possibly through a carcinogen that existed outside of his body. Thus, G-d chose the smallest of His agents to undo the terribly conceited Titus [1]. While ancient Roman historians attribute the death of Titus to a high fever, D. Gans, a Jewish historian from the 16th century, personally believed that these historians intentionally hid the true cause of Titus' death, so as not to make his death appear to be retribution by G-d for what he did to the Jews.

A similar Turkish legend discusses gnats in the nose of Nimrod. The reappearance of this story, though pertaining to a different individual, suggests that perhaps we are dealing with a "pan-Semitic legend" in which each Semitic nation created a similar story concerning a villain specific to their nation [2]. Based on the text of the Talmud, S.J.Bastomsky noted that the word used for gnat in the Talmud, *yattush*, could also be translated as mosquito, which might suggest that Titus died of malignant malaria. Mosquitoes were known to be spreaders of malaria in the ancient Mediterranean world [3].

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The postmortem examination of Titus's brain, revealed to the Romans a cellular mass and/or insect of some sort. Scientific data would suggest that he suffered from an intracerebral tumor, similar to the opinion expressed by the Maharal. The Roman nobles specifically reported finding a mass resembling a sparrow. The growth in Titus's brain was probably a spherical mass with small emanations, a shape that could easily be described as resembling a small bird. The description of the beak and nails of the bird, which were claimed to be made of metal, suggests that the tumor had a few outgrowing segments of a very hard consistency. Since the "gnat" entered through Titus' ear, the tumor must have been located near the base of the brain. The cellular mass, recorded by historians with two conflicting measures, was either two selas, the equivalent of 28 grams, or two litras, the equivalent of 640 grams. A possible explanation for these contradicting figures is as follows:

Most likely the brain section of Titus was exposed in the course of the embalming procedure, a burial technique used in Egypt. Egyptians would remove the brain through the nose by using a utensil of metallic hooks to remove one piece of the brain and oil for cleaning out the last part of the brain. At the time, this procedure was performed by funeral workers, not by doctors. The funeral workers probably had removed a large part of the brain, when a

small tumor then appeared. Unable to tell whether the tumor was part of the brain or a formation of its own, they chose to weigh it twice, first weighing the tumor alone (which weighed 28 grams) and then weighing the tumor and large part of the brain that was already removed, (for a weight of 640 grams). If we assume that Titus' entire brain weighed about 1,300 grams, the tumor appeared after the frontal portion of the brain was removed. The imaginary line dividing the frontal lobe from the occipital lobe of the brain goes through the cerebellopontine angle, an anatomic landmark where the cerebellum and pons connect and a common site for tumors of the brain stem. The description of the weights of the sections of the brain suggests that there was a tumor weighing 28 grams, located in the cerebellopontine angle. The description of a gnat hammering against the brain can be identified as tinnitus, a ringing or buzzing in the ear occurring without an external stimulus. Tinnitus is a common symptom of tumors in the cerebellopontine angle, since the vestibulochochlear nerve (CN VIII) is located on the pons[4]. Some Greek and Latin sources claim that Titus died of a raging fever, which he tried to bring down by bathing in snow. This remedy probably just made the situation worse [3]. If fever was the cause of his death, then perhaps the tumor was only responsible for the tinnitus [4].

Roman accounts of the events leading up to the death of Titus fit in with the theory that Titus died of a brain tumor. Suetonius and Dio, in their description of the events preceding Titus' death, speak of what could be classified as depression. Suetoniusaccounts, "After the Games were finished, at the end of which he had wept copiously in the presence of the people, he made for the Sabine territory in a somewhat gloomy mood...." In the latter part of the summer of 80 C.E. Titus attended this festival, and there are no records of what occurred in the last year of his life. Dio belittles Titus' achievements from this point on, and notes, "...[H]e accomplished nothing further of importance." So it seems that right before his death, Titus suffered from a period of depression, in which he accomplished little, and then died.

There are very few modern cases of individuals suffering from brain tumors who managed to carry on with their lives at a routine level. One case very similar to Titus' has been found, namely the story of E. Liddell, a great Scottish athlete who competed in the Olympic Games in Paris in 1924. Near the end of the year1943, it was noted that Liddel had begun walking and talking at a significantly slower pace. In January of 1945, he came down with what was thought to be influenza and acute sinusitis. He suffered from excruciating headaches, a partial stroke, and acute depression. By the end of February he claimed to be feeling much better; however, abruptly after his claim, he began to experience paroxysms of pain. He began convulsing and vomiting, and shortly thereafter fell into a coma and died. When an autopsy was performed a tumor was discovered on the left side of his brain. The tumor had caused hemorrhaging of the brain, and ultimately death. Just like Titus, Liddell experienced headaches, depression, and a significant "slowing down" prior to his death. He, however, could still function at a routine level and felt much better just prior to his death. Titus felt better before he died as well, perhaps explaining why he did not make arrangements for a successor to the thrown.

With the above evidence in mind, the unusual passage from the Talmud describing the death of Titus takes on much more meaning [3]. ■

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