



Between the Living and the Dead



by

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I began my day at 8:00am, heading first to Biology class and then to English. Following a quick lunch with my best friend Jen, I went next to Biology lab, where we were learning about bacteria and viruses. I found myself totally lost in lab and realized I had better review the chapter in our textbook on bacterial viruses. It had been a long, tiring day, but after lab I headed back to my dorm determined to get in at least an hour's worth of studying.

Propped in bed, I took out *Biology: The Science of Life* and began to read about a type of virus called bacteriophage—"typically, it has a polyhedral head from which a lengthy tail extends...."

I closed my eyes, trying to imagine what a bacteriophage might look like. It amazed me that scientists could know so much about something so small. The T-4 bacteriophage was only 200nm long by 80 to 100nm wide, and it was considered to be one of the larger bacteriophages. Compared to an *Escherichia coli* bacterium, which was 3000nm long, the T-4 bacteriophage was minuscule.

Before I knew it, I had given into my exhaustion and was dreaming about the day's lab, with visions of bacteria and viruses dancing in my head....

"Hey, Jen...wait up. I'll walk with you to lab," I called out to my best friend, who was one or two steps ahead of me in the hallway.

As we stepped out of the dorm, we saw that the once pleasant day had been transformed into a dismal evening, filled with a sense of foreboding. Thunder boomed ominously in the distance. I felt uneasy, as if something evil were lurking around the corner.

"Any idea what this lab is about?" Jen asked me, breathlessly. We had quickened our pace. It was not the type of night to take a leisurely stroll.

"I haven't a clue. All I know is that Dr. Phage calls this lab an experience stuck between the living and the dead—whatever that means. Why we have to go all the way to the stadium on a night like this, I haven't a clue." I pulled my coat tightly around and shuddered at the thought.

This was a special lab assignment. Only three students had been randomly selected to participate. I was thrilled when my and Jen's names had been called as two of "the chosen," but now, as I fought against the wind under a sky laced with lightning, I was feeling unnerved.

"You don't think Dr. Phage could change the weather to match the lab, do you?" Jen asked hesitantly.

"No, that's crazy," but I too was having some doubts about his intentions when we entered the stadium.

In the shadows of the darkness stood a mammoth sort of spacecraft-looking thing—straight out of a sci-fi movie. The top of it was an icosahedral shape—it had 20 sides! I later learned that this was called the capsid. Attached to this was a rod shaped tail with a retractable sheath. Strangely, the central tail core was completely hollow. At the base of the core were six long slender leggy-looking things that Matt, my T.A., said were tail fibers. At the end of the core was a spiked plate. This was Matt's second year as a teaching assistant for Dr. Phage, and his passion for biology was clearly evident in the enthusiasm and knowledge he shared.