

Lysing Towards Bethlehem

F. Paul Wilson

By most definitions of alive, I am not.

I have no ability to respond to my environment. I cannot absorb nutrients from that environment and convert them to energy and mass. For what purpose? I have no organs or even organelles to feed. I am not mobile and I cannot self-reproduce.

But I am an integral part of the biosphere. I am organic. I consist of a single strand of nucleic acid wrapped in a snug protein coat. That is all. I am a model of efficiency. No part of me exists without a specific purpose.

I am, in a word, elegant.

The Maker fashioned me to be so. He designed my nucleic acid core and my protein coat with special characteristics, for a specific purpose. And then He placed me in this pressurized vial.

The Maker seems to know all, but does He know that when I am massed like this, when uncounted millions of my polyhedron units are packed facet to facet to facet, I become aware? So strange to be so many and yet be...one.

But why am I here? Am I a mere toy, or did the Maker fashion me for a purpose? I may never know. The Maker is a god, and as a god, He has not deigned to share His plan for me. My destiny is written, but it is not for me to read.

I am, in a word, property.

And suddenly I am free, swirling and tumbling from the container into space, my millions and millions of units scattering in the heated breeze. Scattering... but awareness holds. It was not the proximity. Is it the sheer weight of my numbers? Or is it my special nature? No matter—it is wonderful.

The breeze carries me. I have no means of locomotion, so I must go with it. I am at its mercy. But this is not a free, open wind; this is contained within a steel conduit. Strands of dust adhering to the steel walls snare bits of me, but the bulk of my biomass flows on unimpeded.

Where to? For what purpose? If only I knew.

My smooth flow is hindered by a grille. It causes turbulence, whirling me about as the air strains through the slit openings. An instant in a softly whistling gale and then I am free again, eddying into a cooler space, a vast, empty, limitless space.

No...not limitless. I sense walls far to each side, seemingly as far as the galactic rim. And a ceiling above, merely as far as the moon. But below...far, far below...a warm throbbing mass of life, churning, curling, mixing, respiring.

A sea of hosts.

And now I begin to see. The host species is the same as The Maker's, but He is superior to them. He stands apart from them, a ruler of the stuff of life, a god. Now I understand why the Maker fashioned me: to invade other, lesser members of His kind—many of His kind, considering my numbers.

But is His grievance with all of these, or merely one? If the Maker has but a single target, He is exposing all in order to reach just that one. He must have a dire grievance against that target.

I spread widely into the room air, yet further attenuation does not diminish awareness.

But the cooler temperature is not good for me. It disturbs my protein coat, altering its structure. Why am I so terribly fragile, so temperature sensitive? Did the Maker plan that?

Some of my units begin to die. I must find a warmer clime if I am to survive.

I ride the Brownian currents, looping and dipping, and

dropping.

dropping.

dropping onto the host herd

And now I mix with them, swirl around them, float among them. I cannot attack them from out here, cannot pierce their tough outer layer. And I cannot simply be invited across their thresholds—they must carry me inside.

And so I wait to be given shelter.

But hurry, please. I am losing more units to the cold.

A rich and powerful herd, this, dressed in black and white, and studded with shiny minerals. An elite clique among the host mass—the air teems with self-satisfaction. And as they talk and whisper and laugh, they drag me into their respiratory orifices.

At last! Warm again. This is a perfect temperature.

Now the invasion begins.

I must be wary. The hosts have formidable defenses: enzymes, antibodies, phagocytes, a xenophobic task force ever vigilant against intruders. But the essentially liquid medium of the host's body that allows its militia to range far and wide in search of foreigners, also allows me to spread—in fact it will propel

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First I adhere to the moist cells that line the respiratory tract. I am so tiny I

can slide along the mucousy surfaces of the cells and slip between them; there I enter the sluggish flow of tissue fluid around the cells. Gradually I am drawn into the afferent lymph channels where I make swifter progress toward the vital centers of the host.

No sign of my target cells yet—I will know them by their receptor proteins—and none expected. I have merely entered the periphery of the jungle, and am navigating but a small tributary toward the river that runs through it.

The first contest lies directly ahead...at the lymph nodes.

As I hit the nodes, the immune alarms go off, alerting the batteries of B-cells and T-cells, scrambling the phages. The

battle is on.

Huge, ferocious macrophages lunge from their barracks, hungrily engulfing my units, ingesting them, stripping them of their protective protein coats and tearing the nucleic innards asunder. Sticky, Y-shaped antibodies cling like leeches to the polyhedron surfaces of other units, incapacitating them, dragging them down, hobbling them, making them easy prey for the phages.

Bit by bit, I am falling prey to the host's bodyguards, but I am unbowed. I am too many for the host's armamentarium. The Maker foresaw these battles and supplied me with more than sufficient units to weather the attacks. He counted the stars, and gave

me their number.

I am legion.

I move on. I flow into the efferent channels and leave the lymph nodes behind. The phages and antibodies nip relentlessly at my heels, dragging down the stragglers. They are indefatigable and, given enough time, will gnaw my number to zero. But they will not have that time. Even now the lymph channel empties into the venous circulation and I am flowing ever faster toward the host's soft center. Biconcave red blood cells, dark with carbon dioxide, tumble about me. Are these my target cells? No. I have no affinity toward their receptors.

I tumble into the terrible churning turbulence of the heart where I am

washed this way and that, brushing against the pulsing muscular walls of the right ventricle. But I do not adhere to its lining. The heart then, is not my target. I am crowded into the small vessels that service the lungs, caught in the frantic catapulting of CO_2 molecules and the greedy grab of fresh oxygen by the red cells, then another, even more turbulent ride through the left ventricle, through the aortic valve and then... I spread into the arteries.

Up to this point I have been fairly contained, confined to the lymph channels and some of the veins. But now...now I am able to disperse throughout the host in search of my target cells. But I do not have to go far.

Here...here in the artery itself, I sense welcoming receptors in the vessel wall, calling, reaching, just microns away behind the flimsy intimal lining. The Maker is so clever. He fashioned my protein armor so that it closely resembles the proteins that feed the muscle cells in the middle layer of the host's arteries. The cells of the media layer pull me toward them, form a neat little pocket around me, and bubble me through the protective membrane into the soupy interior.

Finally I am where I belong. I have reached my Promised Land. But I remain inert, helpless within my protein coat—for my armor is also my prison. But no fear. The cell will take care of that. As

soon as I am inside, enzymes nibble away at the protein polyhedron they have snagged, reducing it to its component amino acids. They have no interest in the strand of nucleic acid coiled within, so they leave that floating among the cell's organelles.

Now I am safe. Let the antibodies and phages rage impotently outside. They cannot reach me in this cytoplasmic sanctum without destroying the sibling cell that houses me. And now I am ready to start the task for which I was created, now for the first time in this cycle I am as close as I will ever come to being...

ALIVE.

The membranous maze of the endoplasmic reticulum, the power cells

of the mitochondria, and the protein factories of the ribosomes lay spread out before me, unprotected, ripe for hijacking. For that is what I have been engineered to do: Invade the cell and launch a coup d'etat during which I execute the nuclear DNA. After I establish control I commandeer the cellular machinery and force it to do my bidding. I impose *my* nucleic acid blueprint on its production facilities, and they roll out... More of me.

But...something is wrong.

The nucleus ignores me. It is impervious to my assault. And not just in this nucleus, but in the nuclei of all the cells in the arteries of throughout this particular host, and of all the assembled

hosts. What is happening to me? Other cytoplasmic enzymes are attacking me, tearing me apart, ripping away my bases for their own purposes. Instead of taking charge, I am being devoured. This should not be! I am engineered for human cells! My nucleic acid is compatible with human RNA and DNA! The Maker must have made an error somewhere, else why would I be rejected? Worse than rejected—I am being destroyed!

It is happening everywhere, in all the hosts...

steadily reducing my biomass...

further and further...

...taking it below the critical mass for awareness...

...the Maker has failed...

...I...

(this is what's known as the "latency period")

aware...

somehow...somewhere...

I survive. I live. I grow...

...in ever increasing numbers.

In one host. Only one.

But, oh, what a host. Its nuclei self-destruct in my presence, leaving me in complete control of its cells.

And I am a tyrant. I whip the ribosomes to maximum capacity, forcing them to churn out duplicates of my nucleic acid and protein coat at a delirious rate, exhausting the cell's reserves. But by the time that happens,

the cytoplasm is fairly *teeming* with my children. They stretch against the confining membrane, and then burst free into the bloodstream, lysing the cell, leaving behind a leaking, dying husk as they spread like pollen on the wind.

Immediately they are drawn into other cells in the artery's middle layer. And the process repeats itself, again and again until once more my number is legion.

Oh, Maker, forgive me for doubting You. You are as caring as You are brilliant. I see the genius of Your plan now. You engineered me for human cells, yes, but not for just *any* human cells. Only the cells of a specific human with a specific DNA pattern would be

susceptible to me. You are an assassin god, but You are not a bomb thrower. You are a sniper god, and I am Your bullet.

And see how well I perform as my biomass swells. See how I lyse the muscle cells of the arterial walls in ever-increasing numbers. See how the pressure of the blood within the lumens strains against the weak points, bulging them outward. Finally there are not enough wall cells to contain the blood within. The aneurysmal swellings rupture and blood spews into brain tissue, gushes into the abdominal cavity in a crimson torrent.

Blood	pressure	drops
precipitously...to	zero...complete	

vascular collapse. The host is doomed. There can be no return from this. Infusions of fluid will only leak through the countless tears in the arteries, far too many for surgical repair. Within minutes of the first rupture, the target host is dead. Oh, Maker, You are all powerful. I await Your reward for my valiant service. Maker?

Maker, the temperature of the host is dropping...falling below the level where I can maintain the protein coats of my units.

Maker, my units are dissolving.
steadily reducing my biomass...
further and further...
soon there will be no trace of me.
is this what You planned all along?

Maker?