

# THE VIRUS

A game environment for Twilight 2000

By Matt Geisler

In the 16th century, Spanish ships crossed the Atlantic, bringing hundreds of people from Europe to the unexplored South American continent. Along with the settlers and traders, they brought new crop species, new technology and finally, death. The natives of South America were far more advanced than their northern neighbors, and had already formed cities, nations, even empires. They succumbed to the plagues of the colonists. South American cities were infected so rapidly, that whole cultures were wiped out before the Spaniards could even discover them.

In 1969, after the return of the Apollo 11 astronauts from the moon, there was a 21day decontamination process to remove any potentially hazardous life forms, and prevent them from contaminating the earth's biosphere.

On the last Apollo mission to the moon, bacteria were discovered from one of the previous missions, they had survived for years in total vacuum. On earth in 1995, bacteria from the abdomen of a fossilized bee, trapped in amber were recovered. Even though the bee was 25 million years old, the bacteria were alive, and grew into bacterial cultures. Primitive microbes do not obey "human" biological laws. They can survive space, they can live for tens of millions of years, they can easily travel between stars.

Ten million years ago a comet may have struck a life-rich garden world, a distant sister-world to Earth. This would have hurled thousands of cubic kilometers of rock into space, some of the smaller particles were pushed by the solar wind into interstellar space. There is nothing unusual about this, except that this world contained a flourishing ecosystem, similar to ours. Small microbes from this world would have survived the impact of the comet, and would be carried on the particles now in interstellar space.

Eventually, traveling at sub-light speed, such particles might have entered our solar system about ten thousand years ago. They hid in planetary shadows, and debris fields. There could be millions of such particles, all carrying dormant microbes.

100 years ago, our distant companion star passed close to the Oort cloud, and dislodged some balls of ice. One of these became a comet, and barreled it's way to the sun on a 100 year journey. As the comet passed near the inner planetary circle, it became locked into the gravity well of the third planet from the sun. Although a large comet, it was still many billions of times smaller than the earth, so gravity forced it onto a collision course. The comet landed, and despite the panic of the world population, entered the pacific ocean quite harmlessly.

But on its approach to the earth, the comet had acquired some passengers. Namely a few particles from our sister world. Those particles bore alien microbes which germinated, then began growing.

Most of the larger microbes died instantly upon germination. They were far too specialized and thus dependant on our sister-world's ecology to survive. Only a handful of relatively harmless bacterial species could live in the ocean biosphere, and they quickly colonized marine ecosystems, replacing existing bacterial species. While devastating if you were one of those bacteria, it bore little significance to other species. The viruses were another story.

These alien viruses had novel ways of infecting their eukaryotic hosts. It had been over 1 million years since our last biological contact with our sister-world. Their multicellular organisms had gone through a host-pathogen arms race which our world was never a part of, new kinds of defensive and counter-defensive strategies had evolved. The Hosts of our world had no such evolved defenses, and began to die *en-masse*. The arrival of the aliens had begun a phenomenon which until now had been the subject of geological mystery. The result of this viral visit would millions of years later be called a mass extinction. That is assuming any geologists remained to call it such.

**-Excerpt from the last issue of the USA today, June 14 1999-**

Scientists are still baffled by the mysterious sickness which has claimed the lives of more than 15 million Americans. Top officials at the Atlanta Disease control center say that unless something is done soon to prevent the spread of the disease, millions more will die.

**-Portion of the last radio transmission by Voice of America, June 21 1999-**

Martial Law has now been declared in the states of Iowa and Utah. A government ban on travel beyond state boundaries is now being enforced by helicopter gun ships. Hundreds of refugees from the west coast still continue to flood the interior despite the massacres committed in the name of public safety.

**-Automated transmission from ADC headquarters on June 28, 1999-**

"... The disease has been identified as a viral agent which attacks the connective and respiratory tissues.... 100% contagious as an airborne particle.... Only 3 people studied show some natural immunity...hopes for a cure have failed..."

**-Last military radio transmission from west coast containment rim, June 29, 1999-**

"Now less than 10% of division surviving, most of those are incapacitate. Riot has been contained, heavy casualties. Request new orders, over."

**-Last military transmission in America, July 8, 1999-**

"DefPac HQ over.... DefPac HQ do you read?. Over... This is 4, 1, 6 calling any units on this frequency, do you read, Over..."

## **Last Days:**

On July 1st, 1999, one of the last ADC project doctors visited the 415th medical encampment just north of Atlanta. White canvas stretched to the horizon, tents for the sick and dying. A few nurses and aids stood out in their blue bio-suits with matching hoods, doing what they could, but not really helping. Dr Sanders had seen too much of this already, in the space of 6 months, the disease had gone from one isolated case in Hawaii to an outbreak in New York, to total disaster.

The Bio-suits could be taken off once past the decontamination chamber of the research building. Doctors and administrators crowded the hallways, a swirling sea of chaos, nobody was really in charge. This was strongly felt at the departmental meeting, everybody was talking, taking positions; Who was responsible for the new field hospitals, what should be done with the bodies, where should the new cases be sent. Nobody was addressing how to stop the disease, just how to deal with the bodies it produced.

After the meeting, Dr Sanders remained at her chair, exhausted. She was quite surprised at herself for not attacking everyone, she used to have quite a reputation for not letting anything get by her.

"Just going to have a little rest here" Mary thought to herself. As soon as her head touched her arms, she was unconscious.

Mary woke up on a hospital bed. Her first thought is that she foolishly had fallen asleep and someone had moved her here. One look shattered that, she could see the words "Bio-Containment" in reverse, she was inside. Impossible, how could she have gotten infected! A quick look at her arm, the telltale red pox-marks reassured her that she belonged here. Now frightened, Mary got up and looked around. There were hundreds of metal dollies, each filled with a person. Their glassy eyes told Mary that they were all dead, for some time now. She shouted for an orderly to remove the bodies, but nobody came. Mary walked over to the door to buzz for an orderly, but she saw that it was open. Her first reaction was professional, she slammed it shut, and shouted an alarm over the intercom. There was no response. Mary waited and shouted for half an hour before opening the door again, and leaving the containment ward.

She strolled around the hospital, checking every room at first, looking for someone, anyone still alive. Nobody was. Mary got to the airlock and started to put the cumbersome biocontainment suit on, but stopped, there was no need, the airlock was open. Stumbling out into the light of midday, she turned to face the fields. Silence, the constant moans of thousands of sick, the bustling and honking of ambulances, frightened relatives, all silent. The only sound was of canvas flapping in the wind. The smell hit her too, putrescence, the unburied dead had begun to decompose. She couldn't stay here long.

The heart of the city smelled better. There were still thousands of dead, but trapped in buildings, the smell didn't get out as much. And Atlanta had moved most of it's population to the field hospitals anyway. The occasional crunch and shot told Mary that

something was still alive. From a distance she saw several people breaking windows and brandishing weapons. She decided it would be best to avoid those.

"Hey You... Are you a doctor?" A voice came from nowhere.

Mary twirled around to see three young men with guns and clubs. She was paralyzed with fear.

"Are you a doctor?" the man repeated.

"Umm.. Yes." she managed.

"A friend of ours is hurt, can you help him? We'll give you food and guns."

"Okay" She wasn't sure what she was going to do with a gun, but these three seemed less dangerous now that she was needed.

Mary followed the men, who led her to a house on a hill. A knock on the door was answered by the removal of a heavy bolt. Several more people were inside, men and women, all races, some children, some elderly. How could they survive? Mary bent down to look at a little boy, there were red pox-marks all over his arm, but he was healthy.

"We're all like that, we survived, no thanks to any of your medicine" an old woman scolded.

"Hey back off grandma, she's one of us too."

The man grabbed Mary's arm and turned it over, showing the red marks.

There was a makeshift infirmary deeper inside the home. A young woman lay shivering on a bed. Mary pulled back the bed covers, this wasn't the plague, but a gunshot wound. At least Mary knew how to deal with this. It was many years ago that she got her MD, but it slowly came back to her. Her professionalism came back, and she started ordering everyone around like it was her infirmary.

## **Reader Intro:**

Virus is a game of the near future. The world has collapsed into a new dark age, perhaps the last years for the species *Homo sapiens*. Mass extinctions have been charted through the entire geological record, no one has had a very good reason why... until Now. An alien has landed from another planet. Not a green bug-eyed monster, but an invisible particle of DNA coated with proteins. This isn't the first time that aliens have arrived either, there have been many mass extinctions. The story told here is not high fantasy, but grim possibility. Humans of the 21st century have now begun to learn that they are not special, the world does not belong to them, and that they can become extinct. But extinction is not the end, After the Insects came the Reptiles, After the Dinosaurs came the birds and mammals, New intelligent species are diverging from their human ancestors, they possess new abilities. Was Darwin right? Are they more fit? What will happen to the normal humans?

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## **Roleplaying:**

Role playing is a combination of Storytelling and Wargaming. It is flexible enough to encompass these two game types as well. One segment of a game may involve a shared fantasy between players and Game master, another segment might be similar to Chess. It is important to keep a sense of identity in all aspects of the game. Players identify with one or more protagonist Player Characters, likened to the Major Cast of a play. The Game master handles the Plot, the minor Characters (Non-Player Characters), and the environment (being the world, the nation or the local plot of land that the Characters occupy). Gaming begins when the Game master reads the opening narrative of the game, and then asks the Players what they want their characters to do. After the Players declare their actions, then the GM determines how the world will respond. Time is relative, Months or even years can be compressed into a few dice rolls, while combat takes place in intervals of 15 seconds. The amount of detail should depend on how entertaining things become. If things are dragging on, start compressing time, if everyone is enjoying things, add a few dice rolls to determine the details of an event, describe everything to it's fullest.

The openness of a game is also an important decision. This depends a lot on the Players, if they are self-motivated, have some ideas that they want to try, then the GM should relinquish control of the plot. If the Players just want to have fun without too much thinking, then the GM should have a strong plot prepared beforehand. If neither the Players or the GM want to do too much thinking or preparing, then it is time to employ a pre-made adventure, like the sample adventures prepared here.

A game in session might resemble this; On one side of the table sits the Game master, to his left sits a cardboard screen to keep his personal notes and information a secret from the players sitting on the opposite side of the table. Three players each have one or two character sheets detailing the abilities, health and possessions of their characters. One player holds a page on which she chronicles the events of the game, another holds several hand drawn maps indicating how much of the world the players have explored, the third keeps an inventory of everything the characters keep in their base of operations (a secret cache in the basement of a ruined building). The DM indicates the passing of the night

uneventfully, then describes the weather on the following morning. Players mark off food as their characters eat breakfast. The players then decide what they are going to do for the rest of the day. Perhaps it will pass uneventfully, perhaps they will be raided by a gang, mauled by a mutated animal, maybe they will discover a cache of food or tools in an abandoned city, or they will discover something worth adventuring for.

## **The truth is stranger than fiction.**

Virus is not a game of fantasy, but rather it is based on possibilities. In the last 100 years scientists have made discoveries which have at first dispelled the mysticism surrounding our own origins, and at the same time found that the true nature of life is indeed much stranger than the claims of any religion. Consider the following; All of the information to design every cell in our body, and the machinery to build, arrange and maintain these cells from raw chemicals is contained within a tiny strand of DNA. That we begin life as a single cell, that organisms do not remain the same but evolve into different forms over time. Consider that life has existed on earth for 3.5 billion years or more, and that we have existed for 270 thousand years as humans, that civilization has existed for 10 thousand years, and that our calendar only goes back 2 thousand years. Before there were humans, other species have dominated the earth, most of these are now extinct, replaced by us. Throughout geological history mass extinctions have occurred, exterminating many, sometimes most of life on earth. These extinctions are not rare either, many thousands of mass extinctions have occurred, smaller extinctions occur every million years or so. Some of the more relevant biological discoveries have been detailed below.

### **Horizontal Gene flow.**

Known- Evolutionary scientists have long thought that heredity could not fully explain compatibility between divergent species. When viruses were discovered to steal parts of genes from one host and transfer them to new hosts, the concept of horizontal gene flow was demonstrated. Vertical gene flow is simple heredity, parents to offspring. In horizontal gene flow, a vector (virus) moves genes between hosts of different species. The only catch is that the virus must be infectious for both hosts, something rare for viruses.

Speculated- Although normally very slow, gene transfer from an entirely alien virus is described here to rapidly deliver entire genetic systems. Part of the explanation for this is that on the alien world, the nucleus is compartmentalized, and the virus preferentially infects a single nuclear compartment (and thus grabs entire gene complexes). An alien virus would also be infectious for entire categories of organisms (all reptiles, all mammals) as very few defenses would exist.



### **Punctuate Evolution:**

Known- The long standing public notion of evolution as a slow continuous process has lately been challenged in the scientific world. In the fossil record there are long periods in which organisms do not change at all, followed by sudden bursts of evolution. At these bursts (punctuations) there is a radiation of many new species from a single ancestor. Some examples include mammals, which have for 100 million years existed as a small rat-like ground feeder, then suddenly evolved into many diverse forms including Bears, Bats, Whales, and Cats. Our own *Australopithecus Africanus* ancestor remained a 2 foot tall monkey for almost a million years, then suddenly evolved into three different intelligent primates (*Afarensis*, *Homo erectus*, *Panathropus Robustus*) within a few thousand years. *Homo erectus* then wandered the earth for nearly a million years before being exterminated by *Homo sapiens*. More recently the accidental transport of many Spanish silver swords (a small plant) to California and Hawaii caused them to evolve beyond all recognition within 200 years. Once a change has occurred, rapid evolution can quickly create new species. The principle mechanism of such evolution requires some kind of reproductive isolation. This can be due to simple geography, or perhaps due to visible differences causing racism, or a new gene combination may make reproduction with the parent population difficult or impossible.

### **Panspermia:**

This was first theorized by Lord Kelvin (famous physicist of the 19th century), and later ratified by Nobel prizewinning scientist Svante Arrhenius (discoverer of aqueous ionic solutions) in 1903. Simply stated, it suggests that life on earth could have had its origin in space. Comets, meteorites or alien spacecraft could have deposited spores, bacteria or other microorganisms which then began the entire process of evolution. The only fault in this theory was the harshness of space, how could such spores survive for thousands, maybe millions of years. Two recent discoveries have now justified this fault. At the close of the Apollo moon missions microorganisms were found to have survived on the moon -exposed to vacuum- for almost a year. In 1995, scientists have recovered living bacteria trapped in amber for 25 million years. This means that spores have both the endurance and longevity for sub-light interstellar travel.

An extended version of panspermia suggests that living worlds are constantly giving off spore bearing rocks. The movement of stars in the galaxy over millions of years suggests that we may have received such rocks from many thousands of partner planets. This idea has two important implications; 1: that all life in the galaxy has a common ancestry, and thus shares biochemical and cellular organization, 2: that occasionally new organisms are introduced into the biosphere of each living world. Such events might account for some of the frequent mass extinctions of geological history (much the same as the arrival of the Spaniards in South America spelled doom for the native populations). In this game, along

with regular microorganisms came a host of viruses carrying alien DNA right into our own genome via Horizontal Gene Flow.

## **Genetics**

The information on the DNA strand is organized into discreet units called genes. Each gene codes for a single protein product. The protein may then organize other genes (regulatory), get incorporated into the cell (structural) or carry out some chemical reaction (enzymic). Every gene is present twice, one copy on each of two homologous chromosomes. The extra copy of the gene can be thought of as a backup in case something goes wrong with the first one. When a new gene is introduced into a host (Transformation), it is only present once. A dominant gene will be expressed in the offspring of the transformant generation, as only a few cells can be transformed at a time. If the gene is recessive, or only partially dominant, it will not be able to break out of the "genetic background" of regulatory or error-correcting genes. In developmental systems especially, a single wrong developmental gene may be side-stepped, shut down, or bypassed by global control mechanisms, in much the same way that damaged neurons may be avoided.

When mating occurs, only one copy from each gene pair is included by each parent. Thus the child will have a set of one maternal and one paternal copy for each gene. If the parent has two different copies (one normal, one alien or mutant), then there is an equal chance for donating either copy. If one parent possesses a mutant gene, and the other does not, the child has a 50% chance for carrying the mutant gene (as a single copy). If both parents possess the same mutant gene (as a single copy) then the child will have a 50% chance to "carry" the gene (as single copy) and a 25% chance to have both copies, thus expressing the gene fully.

In the case presented here, the 0th generation is the transformant generation, thus the 1st generation should have expressed any dominant genes (none did, all genes were recessive). There should be enough of the alien genes floating around in the 1st generation (as single copies) that it would be likely for people carrying the same alien gene to mate. Thus in the 2nd generation, some simple traits can emerge. Traits requiring not one gene, but several will have only a small chance of coming together in the 2nd generation, but will start emerging in the 3rd and 4th.

Again, this only works with each gene singly. Each mutant trait has a separate gene set, you must have all the necessary genes for that set to possess that mutation. Mating a poison scale with a telepath will not produce a poisonous thought projecting child. All offspring from this mating will appear normal (no traits), but carries (invisibly) the traits for telepathy and poison scales. If the offspring decides to mate with a poison scale person,  $\frac{1}{2}$  of their offspring will have poison scales,  $\frac{1}{2}$  will carry the gene. If the offspring decides to mate with a telepath, it is very unlikely that any of the children will be telepaths, as multiple genes are involved, but the children will have more of the necessary genes than the  $\frac{1}{2}$  telepath parent. In order to combine both traits, the  $\frac{1}{2}$  telepath  $\frac{1}{2}$  poison scale would have to mate with a sibling (and incest has negative consequences),

or with another  $\frac{1}{2}$  telepath  $\frac{1}{2}$  poison scale hybrid.

I could go on and talk about how a bottleneck (reduced population) and isolation will probably force every farming family to at least marry 1st cousins, and most gangs to mate with siblings or  $\frac{1}{2}$  sibs, but that would be icky.

# The Human generations after the Virus

## The originals (aka ancients, 0th generation):

These are the people who were born before the virus struck. The older people of this generation might have archaic skills (such as electronic engineering, automobile driver, computer programmer), while the younger just have memories of the concrete and glass world. The skilled elders are now into their 60's and 70's, they were 20-30yrs old at the time of the virus. Teenagers at the time of the virus are now in their 50's.

These people have been infected by the virus, but have survived. The new genes carried by the virus have been inserted into their germ line, and their children will be heterozygous for these genes.

## 1st generation:

Members of this generation have no memories of the past world. What they do know has been passed down from their parents. The harsh demanding nature of their existence will probably mean that only the essential survival skills have been taught. Esoteric skills such as electronics, or driving are not worth the effort in most cases. They will know mythical stories told by their parents about the old days. Such stories even contain a kernel of truth.

These people will be anywhere from 30 to 40 years old, and probably will be parents as well. Born to virus surviving parents, they may carry new genes. Very few of these alien genes can break through the dominant human genetic background. Those that are strong enough to penetrate are usually fatal, such offspring die before they are born, or shortly afterwards.

## 2nd generation:

The Players are mostly likely going to be of this generation. They are the young adults of the world, and the most numerous. At the beginning of the game, they will be anywhere from teenagers to thirty year olds, the majority being in their twenties. They have heard the stories of the old world second hand, and are beginning to disbelieve them.

The second generation is the transition between the old world and the new. In areas of high mutation, some of these people will have enough of the alien genes to begin expressing them. These new traits are sometimes beneficial, sometimes harmful, and will almost always be frightening to the community into which these people are born. Genes follow the principles of heredity, so siblings of a mutant child will also carry some of those genes, perhaps not enough of them to be expressed, perhaps more. Offspring of a mutant/ non-mutant mating will be normal, as the alien genes once again disappear into the genetic background. In mutant-mutant matings, there are two types, like mutants will concentrate in the children, while unlike mutants will disappear to the background. For more information on this see the genetics section.

### **3rd generation:**

Most of these children will be too young to adventure, but a few will be into their late teens. Those born to mutant parents might possess frightening powers, but hopefully the parents can help them deal with the viral "gifts". More commonly, parents carrying alien genes (without expressing them) now have mutant children, and fear them. The numbers of 3rd generation mutant births are growing large enough to force people to recognize them. In areas of High mutation, almost 25% of offspring show some mutation. Even in areas of Low mutation, there are more than 1% abnormal children.

### **4th generation and beyond:**

As time goes on, the alien genes will continue to be expressed, until they reach a total of around 25% of the population. At this point natural selection (or human selection) will take over. Deleterious gene combinations will decrease, and beneficial gene combinations will prosper. In some areas fear and loathing will eradicate the mutants, many will flee to mutant strongholds. Other areas might grudgingly welcome mutants, or at least accept them. Isolated populations will eventually homogenize, concentrating a few specific mutations. Reproductive isolation, partial or complete, may follow. These populations will be the starting point for the birth of dozens of new species.

## **The Viral Gifts:**

The viruses in the meteor contained a cross-section of genes stolen from their alien hosts. Horizontal gene flow (see intro) has kept the earth and many other worlds compatible, so the viruses still remain infectious. Included in this sample were several strains infecting

animals. Two strains of reptile-infecting viruses carried few useful genes, but did cause a smaller lizard extinction (25 species extinct, 100 effected). Many other strains did bring useful genes to other animal populations. Plants were also effected, but the plants defensive strategy held firm, and no extinctions resulted. Plant life was far more effected by the change in the animal and human ecology. A single strain of virus was responsible for the human near-extinction, and could also infect several other mammals. This virus strain carried hundreds of new genes into the pool, though only one gene was present in each viral particle. After infection, they began randomly inserting them, their human hosts so that each 0th generation survivor would have a single gene inserted into their germ cells.

Genes rarely act alone, it is not a single gene but a gene combination which gives a new trait. This is why the gifts do not appear until the second and third generation, even though every survivor has alien gene(s). Included in the genes were 12 basic traits, and parts of 30 other traits, which might (given time) surface in later generations.

# The 12 human Gifts

## 1/ Telepathy:

The idea of communication is very common, in fact mundane. On our sister world electromagnetic communication has evolved via nerve complexes. Some of the components of this system were received in earlier horizontal gene transfers. In pigeons and other migrating birds, there is a new type of cell which secretes a ferromagnetic particle, (a tiny magnet). This magnet detects the earth's magnetic field and directs the path of migration. In all higher animals, nerve cells act by sending a depolarizing electromagnetic wave down an axon or dendrite. Telepathic communication is simply a matter of connecting the electromagnetic impulse of a nerve bundle to a ferromagnetic particle. This will create a weak radio signal, which can (at close range) be detected by other ferromagnetic particles wired to sensor neurons.

The telepathic gene set includes 15 genes, at least 2 of which are necessary for any kind of functionality. There are three principle consequences of this type of telepathy.

I/ Range is short -10 meters for 2nd generation, up to 1 kilometer if all genes are fully expressed.

II/ Communication is limited to fellow telepaths. At extremely close range, over a long period of time, faint traces of non-telepath's thoughts can be detected. This ability (cold-

reading) improves with skill and gene load.

III/ Only specific communications can be sent/received. The telepathic apparatus is hooked into a specific area of the brain, and the telepath has control over what thoughts are sent/received, similar to a telephone. Unskilled telepaths might not know how to shield their thoughts, and telepaths can be cold-read to gain access to hidden thoughts. Once telepathy has evolved into an art form, telepathic duels can be fought over control of the mind, but this requires skill and experience.

## **2/ Gigantism**

Unlike most gifts, Gigantism is a single gene. The gene product is a hormone, similar to human growth hormone and other steroids, the final effect (phenotype) is an irreversible increase in size and muscle mass. The obvious advantages are increased strength (double to triple human average), damage absorption capability, height (7-8') and mass ( 500# being common). Severe disadvantages include increased diet (8-12000 calories/day), vision problems (the eyes are sunken and distorted), heart problems (heart muscle doesn't quite increase to scale), loss of some coordination (80% human average), and loss of some Intelligence as more of the brain is needed to maintain the larger body (70 IQ being average).

## **3/ Regeneration**

This is the second of the non-visible mutations, it involves a complex of 5 genes of which at least 3 must be present.

## **4/ poison scales**

(Scaly skin patches present at various points on body, contact poison toxic to everyone except those with this mutation), there is also a two gene immunity to the poison, but only poison possessors can utilize these genes.

## **5/ Aquatic Ape**

Increases myoglobin content of the blood, and alters blood volume which allows for deep diving underwater. First two genes alter myoglobin content, allowing for up to 20 minutes underwater. Third gene increases blood volume (a disadvantage, excessive bleeding), which when added to the other two allows up to 40min underwater.

**6/ Purple skin pigment** (no real function)

**7/ Homeotic Mutations** (alien gene disrupts homeotic gene expression weakly, usually results in stillbirths but occasional deformed child survives- wrong organ in wrong place, could be as simple as a third nipple, or as crippling as an arm instead of a head)

**8/ Bar Eye**- (eyes have been altered severely due to a new developmental gene, assists with peripheral vision- increased alertness-, but poor resolution, and reading is a problem)

**9/ Big Head**- Enhanced Neotony, the mutant doesn't change it's body proportions with growth, thus the head remains about 30% of the body mass, and the arms and leg are much smaller than usual. The increased brain volume (2000cc-2500cc) allows for higher intelligence (+3, up to 13 (or 250IQ), but reduces strength(-2), constitution(-1), and agility(-1). If the modifier pushes any of these abilities below zero, then the child is immobile (Str, Agl), or chronically ill (Con). Giving birth to a Big Head child is problematic, and can lead to complications requiring surgery.

**10/ Brown Fat**- This gene gives the mutant the ability to survive colder weather, and intelligent mutants will travel to colder regions (either alpine or high latitudes). Mutants can hibernate 2-3 months if sufficient food volume is eaten, or this can be avoided by dieting. Brown fat cells burn fat to efficiently produce heat, even when the mutant is not active.

**11/ Dry Tolerance**- Skin is altered, becomes leathery or ropy and hairless. The skin will shed in large (1-2cm<sup>2</sup>) flakes simultaneously during a molting (usually every two months). Mutants can survive extreme desiccation, and require 1/4 the water volume that normal humans do in dry environments.

**12/ Fur**- Two developmental genes have altered the fur-reduction pathway normally present in humans, and have disrupted the normal hair development. Mutants will have a full body of fur- patterned similar to a chimpanzee.



Viral Gift (Gene Abbr.)	Minimum Genes Required	Total Genes Available
Telepathy (TEL)	2	15
Gigantism (GIG)	1	1
Regeneration (REG)	2	4
Poison Scales (POI)	2	4
Aquatic Ape (AQA)	2	3
Purple skin (PUR)	2	4
Homeotic Mutations (MAD)	1	3
Big Head (NEO)	2	2
Bar Eye (BEY)	3	3
Brown Fat (BFA)	2	2
Dry Tolerance (DTO)	3	3
Fur (AGL)	2	2

## Animal Gifts

All mammals can possess the human gifts, but the advantage of telepathy will be lost on simpler (non-primate) minds, as the base genes do not exist. Regeneration will also be lost quickly, as most regenerating animals will starve long before they see an advantage from the gift. Others gifts might cause the formations of new mammalian species over the next century or two.

## Status of the North American Continent 2039

The Virus RPG begins after the world has begun to reform after a 40 year period of anarchy. In some areas, people have organized into city-states, even small empires. Other regions, especially the coastal areas, have developed more slowly, and are still barbaric. The young people of today are most likely to be the ones the PC's represent. The second and third generation after the virus are numerous enough to begin to squabble over land, and the limited resources available. These are the expendable ones, those who can afford to, or need to move away from their community in order to find a life of their own.

## The US Midwest

The virus came to the Midwest three weeks after the outbreaks along the coast, mostly due to air passenger transportation. The depopulation allowed early revolts by militia type organizations bent on proving that the virus was a government plot to control America. This militia sentiment is still strong among the people of the Midwest. Militias in the Ohio and Kentucky rural areas took control of several small towns. The US army never got a chance to recapture these spots, and really didn't care. As depopulation continued, even the militias broke up, survivors became more and more independent. Large cities were evacuated as the food distribution network collapsed, and many people just grabbed a plot of fertile land and began farming it. Initially this practice was quite successful, and prevented the big city gangs from growing. As raids grew more common, independent freeholders began arming themselves and trading with each other for weapons and tools.

15 years after the virus, these interdependences grew into mutual protection enclaves, and later into towns. Punitive raids were conducted on the major gangs of the Midwest and by year 25, the last major city gang (at Cincinnati) was dealt a crippling blow. Raiders now became more of an external threat; large gangs still lurked in the east, which occasionally raided a Midwestern town, usually brutally. Towns grew into city-states, and some of the old capitals (Columbus, Akron, Lexington, Indianapolis) were gradually re-inhabited as a source of technology and commerce.

Today there are 7 city-states, with about 1000-1500 people permanently residing in them; this doubles during the trade caravans of late September. Many cottage industrial practices abound, metalworking, cloth making, chandlers, coopers, wagon-makers, and leatherworkers, similar to the trade you would expect in a "wild west" town. Justice is in the form of a town sheriff, appointed by the mayor. Each townie swears allegiance to one of the 7 city states, or remains independent. Approximately 100,000 people live in city-ruled towns and farms, another 300,000 remain independent. The Chancellor of each City council appoints one representative to sit on the IFC or independent farmers collective. This is a watchdog organization which can call up militias to conduct raids, or defend against external threats. The largest militia ever assembled was a group of 500 riflemen, 150 cavalymen, and several small cannons, called upon to defeat a major raiding body from the Appalachian mountains. There are always 50 IFC cavalymen on duty at all times to thwart brigandry along the trade routes and scout the borders for raiders. These are usually well-armed, elite troopers.

Of course the IFC can't be everywhere, so people depend on a kind of vendetta-justice to deal with legal matters locally. Outside of the towns, or where the sheriff is corrupt, the people have turned to adventurers, gunfighters and mercenaries to bring them justice, or vengeance. In many cases "good guy-white hat" adventurer types are hailed as heroes, even by the governmental bodies (who secretly bear grudges against such upstarts). Most

gunfighters are gray-hats, or are downright nasty people, who shoot whoever they are paid to. In some cases, the fine line between gunfighter and bandit is crossed so many times that it becomes hard to tell. The IFC is always looking to hire on such adventurers to fill in the gaps, where they are understaffed, or don't particularly want to waste elite troops on dirty dangerous missions.

Technology availability:

The city-states are one of the few places in North America where gunpowder is manufactured in quantity, and cartridges are reloaded. They haven't yet figured out how to stamp more brass cartridges, so ammo is expensive. Guns are even more expensive, at least the modern ones. Some entrepreneurs have started manufacturing black-powder muzzle-loading firearms and cannons. In another few decades, modern firearms should make a comeback here. Automobiles are very rare, but a few oil-refining sites exist, drawing from the sporadic oil wells in Ohio and Kentucky (most of this oil is used as heating or lamp fuel). A few people are encouraging the comeback of trucks, and trying to set up re-assembly plants and machine shops, but none of these are currently functional. Currently all transport is done by horse or mule, via wagons or riding. There is a lot of demand for technology especially among the city-states, the opportunities abound.

Outlying areas:

Northern areas (Michigan, Wisconsin, Canada) are still barbaric, and many bandits live on the borders. Southern areas (Tennessee, west Virginia) haven't been explored yet. The east Appalachian mountains house many large bandit gangs (former survivalist organizations). No contact has been made further west either, though there are some reports of an organization beyond St Louis.

## **New York, New York**

The virus overcame New York City shortly after the outbreaks in California and Japan. Medical staff was prepared, or at least they thought so, for the worst epidemic since the Black Death. In the early days the city still fought for containment, banning all arriving flights, closing major highways into the city. There were a few early riots among the poorer citizens, but these were handled well by the police and National Guard. A few weeks later the sick outnumbered the healthy, and more riots began. After a while the police no longer responded to riots in certain sectors of the inner city. Sensing this, looting and anarchy began on a massive scale, this led to fires breaking out of control and burning down most of the inner city. The city government collapsed when the US military decided to pull out of the coastline. USAF bombers cratered all of the roads and bridges leading out of the tri-state area to slow the spread of the disease.

Today most of the city is burnt. What didn't burn in the Virus year fires burnt over the four decades following. A few free-standing buildings remain, along with the skeletal ruins of skyscrapers. Picture Berlin after the Russians invaded, then add 40 years of decay. Crab grasses and Asters have colonized the inner city streets, breaking up the roadways. Further out Broom sedges and Short leaf Pine form a dense low canopy, making travel difficult in the former suburbs. Asphalt local roads have almost completely disappeared, leaving only a few flat patches. Larger highways and concrete roads have survived, but they too will disappear in a few more decades.

The people of New York City are divided into three categories. Some survivors have gone partially insane and reverted to a primitive hermitic lifestyle. They tend to be older (50-70), and have established a small hovel somewhere in the city. They live by trapping small animals and gathering wild raspberries and currents (which grow in the suburbs and city core).

In some cases entire families were resistant to the effects of the disease (due to some heritable resistance factor), and left the immediate city early in the virus years. These people have established farms in the outer city, and now maintained by the second generation of children. These people tend to be isolated, maybe 10-20 people in one building complex, mostly the sons and daughters of the survivors, now in their 30's, and their children (teenagers). A few of these families have made contact with each other and trade farm goods (i.e. corn for apples). The luckier farmers have livestock and plows, the poorer ones use hoes and vegetables. They all have firearms of some sort, usually shotguns and rifles (2-4 per household) but are critically short of ammunition (5-10 rounds per gun). Some entrepreneurial farmers have found museum piece or replica black-powder weapons and can synthesize black powder, but these are rare (and valuable). Some rumors are spreading around about some third generation children being strange, but fear and a harsh lifestyle have prevented any real discovery of the viral gifts.

The farms are sometimes raided by one of the many city-based gangs. The majority of the New York City survivors have turned to gang warfare. There are five major gangs, each numbering over 1000 members. Several smaller gangs cling to the fringes, but they are being destroyed or absorbed by the expansion of the major gangs. The gangs are more heavily armed, having SMG's and pistols as well as shotguns and rifles. Again ammunition is scarce, and some of the more complex guns are breaking down. The gang members live by scavenging for food within their "turf" and sometimes run small parties to scavenge in rival gang's turf clandestinely. When these parties are caught, they are usually killed. Within ten years, the major gangs will begin clashing with each other for dominance of the city and the last of the food resources. Then they will turn their attention to the outlying farms.

PC background examples:

Adventuring parties can come from any of the following origins. It is recommended that all players in the first adventuring group come from the same background; this saves on *ad hoc* explanations of how the group formed.

1: Former Farming family:

-after a particularly bad raid from a city-gang, one of the farming households was burnt to the ground. A handful of the farmers managed to escape, and fled into the nearby hills. After they returned, the eldest of the 1st generation siblings decides that there isn't enough left to rebuild the farm. The group (4-6) is composed of family, brothers and sisters, parents and children. There might be some young (ages 1-8), and some youths (ages 9-16) or these might have all died in the raid, leaving bitter and vengeful parents. The second and third generation children will usually be too young to fight, but will be useful (gathering food, carrying things, etc). The family will be broken (missing some parents and children), and extended (uncles, nephews), with only a few survivors. Depending on how you choose the family, it could be just 4-5 20-30yr olds seeking vengeance, or a mix of elders and children seeking a new home. Players will have experience in farming, hunting and gathering, and some firearms skills.

2: Former Gang:

-The larger inner city gangs are destroying many of the smaller fringe gangs. PC's are the survivors of such a destruction, who have decided to flee rather than become initiated into the larger gang. There will be little or no blood connection between PC's, but they will all have fought together. Skills would include melee weapons, weapon making, martial arts, scrounging, and some firearms skill.

3: Wanderers:

-Either a farm dried up, or a small cache ran out of food, or these PC's just ran away from home. At any rate, the PC's are not natives of the NYC area, they have wandered into it.

## Denver, Colorado

The last stronghold of the US military is the Denver controlled region. On the day before the first coastal outbreak, a militia terrorist group was cornered in Denver international airport, they used old LAW rockets to explode several taxiing planes and brought air traffic to a halt. The standoff took more than a week, and the final assault by the US 7th light infantry destroyed much of the control tower and ILS array. By then there were enough cases of the virus to convince the Colorado governor to close the airport until the epidemic was brought under control.

The result of the fortuitous early closure of the major airport was the delay of viral outbreaks in the Denver region of Colorado. During the struggle to contain the epidemic, the US military established a headquarters here, and later retreated many of its surviving units and experimental hospitals here. But even this combination of luck and foresight could not keep the virus out forever. Denver was the last US city to succumb to the virus.

Enough US servicemen were resistant to the virus so that a series of programmed retreats and a last general order to reorganize at Denver brought five thousand soldiers and officers to the region. The hospital experiments continued for a year after the first outbreak, until the doctors realized that there was no point, everyone who was going to die from the virus had. The military rule continued, at first to fill the vacuum. Later, the generals had just gotten used to power, and were very reluctant to give it up.

Today, Denver is the sight of the largest organized administration in North America, perhaps even in the entire world. Over the years, the military has turned more and more fascist. In early years, helicopter units scoured Colorado and as far as Wichita, Kansas locating survivors and "drafting" them into service (or should we say servitude). A rigid caste system has developed from the military ranks, and there are now three ranks of Sub-private, a euphemism meaning slave. Such people work agricultural fields; a few lucky ones find themselves in mines, primitive steel foundries, or assembly lines. Most Sub-privates despise their superiors, but feel helpless to do anything about it. Some of them have been reproducing in secret, Children and pregnant women hiding from hovel to hovel, or in underground tunnels, built and kept by rebellious slaves. Sympathizers within the Army Engineer corps enter these children into the ranks as "Walk-ins" (people who walk into the controlled region and request re-patriotization).

A handful of 2nd generation Sub-priv's have discovered a weaker forms of the viral gifts, usually only the non-visible ones can survive among the population. One weak telepath, David Fatty, discovered some of the army secrets by reading one of the Mil. scientists minds. He has begun a 5th column within the sub-privates, and has found other telepaths especially among the illegitimate children.

Above the Sub-privates are the Privates and NCO's. These are the bulk of the troops under the command of the officers. They were all born after the virus and have been told nothing of the previous world. The Denver military is the only life they know, and they are loyal to it (usually). Some of the troops who have gone on recent helicopter missions have heard rumors of lands to the northeast where people are free, own their land, and food is not rationed. There are even rumors of shining cities to the south where everybody owns a vehicle or horse, and alcohol is cheap, and you are allowed to have a family and reproduce without authorization. Such rumors have been the seed of dissent among the ranks in these last few years.

Military scientists have taken it upon themselves to regulate reproduction. Select women are assigned "breeding duty", and forced to carry children for the "genetically superior" few (which usually turn out to be the elite classes). Originally this was to ensure virus resistant children, and to solve the inbreeding problem of such a small population. Now it is an administrative farce, the program has carried on far past the time when it was useful.

These scientists have been aware, for five years now, of the presence of alien genes in some of the children. They are scrambling to identify the new genes, and develop tests to detect these genes in the new generation of children. When such children are identified pre-natally, the pregnancy is terminated by military order. Living children expressing any mutations are incarcerated, and usually killed (during experimentation or interrogation), the parents of such a match are forbidden from breeding again. This has had the side effect of allowing some of the common ranks to become breeding stock, and a new rash of helicopter missions to find "genetically pure" humans. This information is highly classified, and only the scientists and generals know about the alien genes.

The Officers are the upper 10% of the population. They are broken into competing factions, based on the loose chain of command left after the virus. Military scientists and Doctors usually belong to the 215th medical corps, under the command of General Omar Stilben, a ruthless believer in social evolution. The bulk of daily duties and policing within the region is left to the 4th Army Engineer Corps, commanded by General Marsha Haber, a hopeless aging bureaucrat, served by an army of paper pushers. Extra-curricular activities and reconnaissance is done by the 82nd Airborne and 7th Light Infantry Divisions, under the direct command of COMUSNA (commander, US, North America) General Wilson Runyon. The medical corps has the ear of General Runyon, but has no military assets. General Haber detests this arrangement and would like to see Runyon replaced (by herself). Her assets consist of only a handful of light infantry, but she does control supply and logistics for the entire force, and has a sympathetic ear in Colonel Oxford, commander of the 2/82 Airborne Brigade. General Buyer of the 7th Light Infantry sees himself as the proper successor to the supreme command, and has an attack helicopter battalion (of some 24 UH60's and Apache's) loyal to him. General Artha in charge of the 82nd Airborne Division is a moron, and could be easily swayed by any of the others, his Colonels run their own business, often submitting requests for operations that

have already been completed. The Generals are aware of developments in Ohio, and several plans have been drawn to reclaim that region. A few weakly successful attempts have been made to expand the controlled region. These have been bogged down by bureaucracy and infighting, and the presence of Colorado free farmers and gangs, all of whom despise and resist the military government.



# Regional Data Cards:

## **New York City**

Original population: 7 million  
Mutation frequency: Low  
Current population: 20,000  
Anarchy level: High  
Largest organizational unit: 1420 (gang)  
Firearm density: Low-Medium  
Climate: Temperate-coastal  
Biome: Forest-coastal

NYC has been heavily depopulated, and the only form of organization are the gangs, which account for over 50% of the population. Some free farmer households have sprung up around the fringes.

## **Denver Colorado**

Original population: 4 million  
Mutation Frequency: High  
Current population: 75,000  
Anarchy level: Low  
Largest organizational unit: 25,000 (fascist)  
Firearm density: Extremely high  
Climate: Temperate-dry  
Biome: Desert/shrub

Most of Denver has become the last stronghold of the US armed forces. The bulk of the troops (1st and 2nd generation) know nothing of the previous world. Information is tightly controlled, discipline is harsh. The military is known for it's corruption and bureaucracy. This is also the largest single organization in the continental US. Mutated children of the second and third generation have been brutally murdered. Only the non-visible mutants have survived. In the third generation almost 20% of infants are killed shortly after childbirth and called stillbirths. A small fifth column of less-visible mutants has begun to form.

## **Greater Midwest (Ohio-Kentucky Indiana)**

Original population: 40 million  
Mutation Frequency: Medium  
Current population: 400,000  
Anarchy level: moderate  
Largest organizational unit: 1400 (city-state)  
Firearm density: medium  
Climate: Temperate  
Biome: Plains/forest

## **Gulf of Mexico costal cities (Louisiana-Mississippi-Georgia-Florida-Mexico coastal areas)**

Original Population: 40 million  
Mutation Frequency: Medium  
Current population: 1 million  
Anarchy level: Moderate  
Largest organizational unit: 2500 (city-state)  
Firearm density: Medium  
Climate: Subtropical coastal wet  
Biome: Swamp/delta/forest

The midwest now boasts 7 city-states which have become the trading places for the independent farming communities which have sprung up over the area. Over 100,000 of these people have a loose alliance to repel eastern raiders, and conduct retributive raids. Bandits and adventurers abound in this area, many western-style gunfighters and mercenaries can be hired to "right a wrong" or extract a vengeance.

The warm climate and viable delta region has allowed an agricultural comeback for the populations of the US and the Yutacan peninsula of Mexico. Small cities have sprung up to conduct trade in luxury products between regions. Sailing ships are being constructed in the newly re-established cities of New Orleans, Veracruz and Progreso. Pirates also abound, and have established bases on the islands or in the ruins of Brownsville. New Orleans has managed to refurbish a handful of coast guard ships and one Navy frigate, with which it hopes to put an end to the Caribbean pirates.

#### **Los angeles, Southwest costal area**

Original population: 12 million Mutation Frequency: High  
Current population: 150,000 Anarchy level: Very High  
Largest organizational unit: 500(gang)  
Firearm density: Medium-low  
Climate: Subtropical coastal dry Biome: Chaparral/ desert

LA has been completely overrun by tiny competing gangs. A major Gang war broke out about 5 years ago, and many of the larger gangs broke up into smaller pieces. The region is vary anarchic, as gangs have yet to firmly establish boundaries, rules or relationships with each other. The population is fairly high as canned food from the pre-virus days still exists, but it will run out in 2-3 years. The appearance of alien genes (which precipitated the war) subdivides the gangs further, those who and who do not allow mutant members. At least one small gang is composed entirely of mutants (mostly visible ones), but even these gangs will divide over specific

#### **Southern Ontario**

Original population: 7 million Mutation Frequency: Low  
Current population: 40,000 Anarchy level: High  
Largest organizational unit: 30(family)  
Firearm density: Very Low  
Climate: Sub arctic /temperate Biome: Boreal forest/forest

The harsh climate of Ontario, and severe infectivity has nearly destroyed the Ontario population. Most of the survivors eek out an existence on poor soils and short growing seasons. The regions with good soils are prone to bandit attacks from numerous marauding gangs which has seriously curtailed agriculture in these areas.

mutant types. One of the most powerful gangs has several telepaths in positions of power, with delusions of a psionic empire at war with the "dulls".