Curing the Perfect Deterrent

New theories and experiments upon the neurotoxin of Houndoom venom



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TABLE OF CONTENTS

Introduction 3

1 Natural Defense Systems of Houndoom 4

1.1 Neurotoxin Deterrent 4

1.2 Domesticated Use 5

1.3 Houndoom Necroneuropathy Disease 7

2 Toro Incidents 10

2.1 Kiori Ishiin 10

2.2 Alice Star 11

2.3 Vlad Tudor 11

3 Treating the Destroyed Nerves 13

3.1 Doctor Orsai 13

3.2 Antivenom Development 13

3.3 Professor Calim 14

3.4 Burn Heal and Aloe Hybrid 15

3.5 Neurectomy 15

4 Incurable Disease, Solvable Symptoms 17

4.1 “Phantom Nerve” Pain and its Effects 17

4.2 Nerve Block 17

Conclusion 20

References 21

INTRODUCTION

Houndoom venom affects people in all regions. Currently,, three people within Toro region itself are known to have been affected by this venom, and endure its painful and debilitating results in their day to day lives.

The goal of this paper is to gather the known research of this venom and proposed treatments. The treatments will then be analyzed, and the most effective will be selected for testing on volunteers.. The need for this cure has skyrocketed in the last handful of years throughout all regions, with a focus of trying to restore damage done by the venom.

Chapter I deals with the venom and its use by the Houndoom in both the wild as well as domesticated.

Chapter II will cover the three known Toro victims and their experiences with the venom and treatments.

Chapter III deals with collective treatment data from various sources, varying from treatments to observations.

Chapter IV will be my proposed treatment and its effects upon similar subjects and the push for human testing so the quality of life may be improved.

CHAPTER I

NATURAL DEFENSE SYSTEMS OF THE HOUNDOOM

1.1 NEUROTOXIN DETERRENT

This section covers the toxin in its natural environment, through the flame of wild Houndoom. Houndoom travel in family packs with a dominant male, and oftentimes one or two submissive females with their offspring. The female Houndoom is to tend to the young and hunt, and the male watches over their territory and protect their pack. According to the pixeldex itself, the Houndoom's howls send chills through the spines of any wild pixelmon nearby, usually driving them back into their nests.

This pixelmon is designed to be left alone, by both humans and other pixelmon. A top predator and travel in close knit packs, it is difficult to accidentally stumble onto one. The bone-like protrusion from their throats sits just above their vocal cords, allowing their howls to echo and travel further, giving the eerie feel to it. This is the Houndoom's natural warning.

According to Professor Romero: "The powerful effects of the Houndoom's flame became a secondary evolutionary trait that was required to turn back those that challenge Houndoom for territory or hunting rights. The toxin doesn't seem to affect others of its species."[1]. Further observations support this claim. Solitary male Houndooms trying to find a female will often fight males that have several females in their pack for breeding and dominance rights. These fights very rarely use flame, the Houndoom preferring to use their teeth or horns.

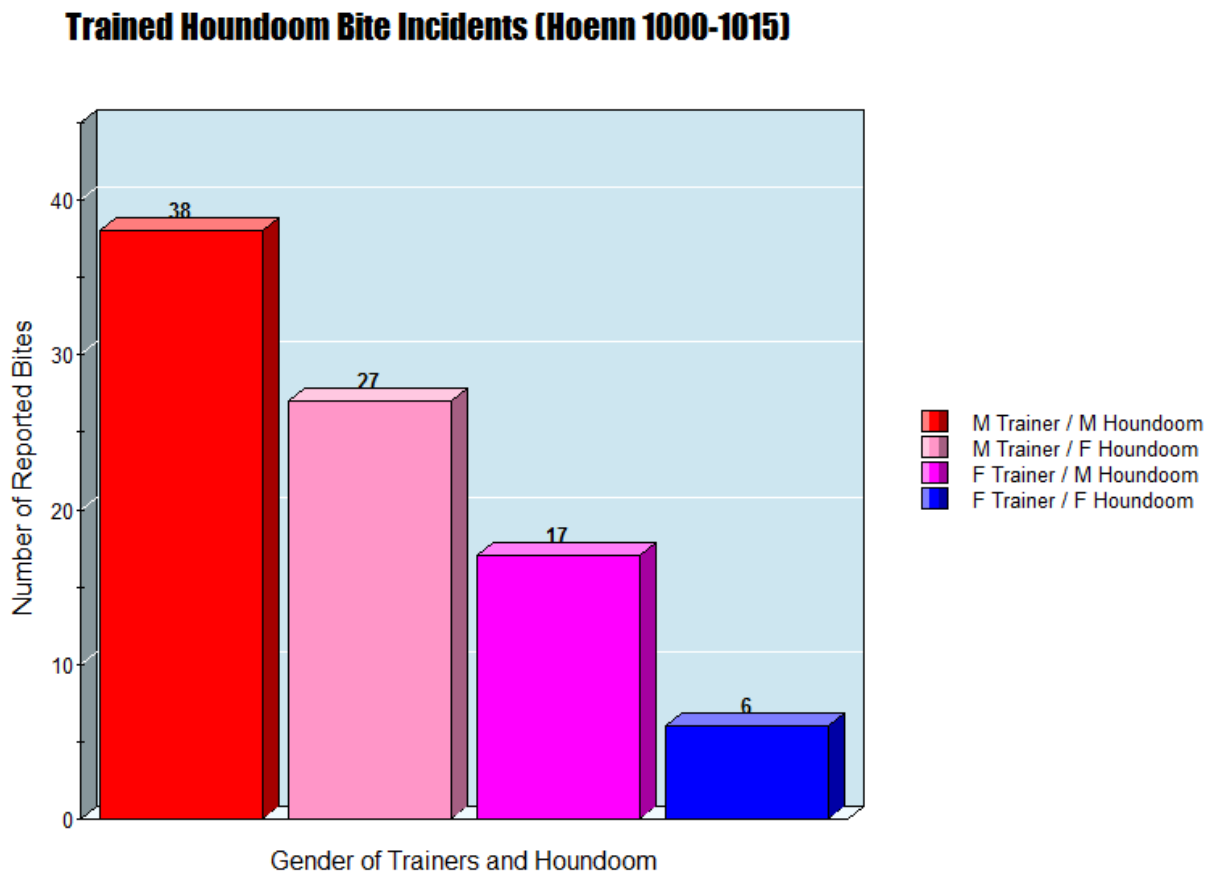
Observations done upon a pair of Houndoom have concluded that the toxin of their flame do not affect each other. From this, the flame and its unique effects were likely a trait developed to ward off wandering species that would not take heed of the warning howls.

Once hit by a Houndoom flame, the pixelmon takes permanent injury. There have been no observations of a single Pixelmon repeatedly aggravating a Houndoom, making the venom a painful, yet effective natural deterrent.

1.2 DOMESTICATED USE

Domestication or capture via pixelball of a Houndoom has no notable effect on the chemical composition of the venom. Even those born in captivity and evolved into a Houndoom share similar traits to those in the wild. [2] This pixelmon keeps their protective nature regarding their trainer, and any pixelmon that belong to the same trainer, keeping their pack mentality. The males show more aggression than the females in terms of using their flames, with a rate of incidents ranging from an estimated 60-75% male Houndoom compared to their female offender counterparts.

Previous studies have shown a correlation between the houndoom/trainer gender combination and the reported incident rate. The graph below has been compiled based from Hoenn incidents over a fifteen year period.[3]



The study shows that male trainers, independent of the houndoom sex, correspond to a greater incident rate. And, male houndooms have a higher incident rate than females. A reasonable hypothesis is that the Houndoom sees a male trainer as the leader of their pack, and will strive to use whatever means necessary to protect their trainer. Another proposed hypothesis is the houndooms have some sensory capacity to detect testosterone levels in nearby organisms in order to identify alpha males. This promotes an aggressive or defensive reaction in the houndoom.

The bite victims range in age, ability, and gender. There is no notable correlation between these variables and incident rates. A few reported cases indicate that the trainers were unaware of

the effects of the flame, whereas others became criminal cases where there was an intent to inflict suffering.

Pixelmon battles show no prolonged negative effects upon victims of the flame. Such as a Chansey getting hit by the flame report no pain after visiting a healer. This has been confirmed through personal experiments and battles, with Anubis, my Zoroark, acting as translator.

1.3 HOUNDOOM NECRONEUROPATHY DISEASE

Houndoom Necroneuropathy is the name given to the pain associated to the neurotoxin.[4] This devastating chronic disease that is a very common symptom of areas affected by a houndoom burn. The burn given by the flame is as if a normal burn. The disease comes from the neurotoxin found within the flame itself, which attaches onto the nerves of the area and effectively killing them. The body's natural response upon dead tissue and cells is to try to repair them. However, nerve cells, upon death, are not able to be restored, nor can the body replicate them.



Though the cell itself feels no pain after being destroyed, the toxin tricks the body into believing the nerve is simply damaged, thus causing extreme pain. This is akin to phantom pains felt by those who have recently lost a limb. According to Dr. Orsai's studies, while most neurotoxins simply provide a block to nerve transmission signals in the body, usually from cell to cell along the chain, this specific neurotoxin, called Hexoom for its chemical structure and origin, is chemically similar to the neurotransmitters used to propagate nerve impulse transmission. Hexoom accumulates within the synapse of pain nerves, slowly accumulating onto the receptors until it triggers a false impulse propagation. [5]

If there is any hope of reversal, many have attempted to make antivenoms. However, antivenoms do not reverse damage that has already been done, and it would have to be injected within five minutes before full effect takes place.

The disease is labeled as chronic, lasting for the remainder of the victim's life. It is associated with periods of calm and pain, known as flare ups. Remission is a very rare event, and usually occurs within the last years of a human's life, likely a result of the degradation of the

Hexoom.. However, remission usually does not last long, usually a period of 1-2 years before returning. It is localized to wherever the flame hit the body, and has never reported to spread to other parts of the body.

The location of the disease has varying effects upon the person and their functionality. While in all cases, extreme pain is reported, some also have difficulties adjusting. Those who have had the flame hit their leg have a weakness in the leg, whereas others with the face have had reports of feeling ‘sluggish’ in the affected area, much like a stroke victim. The muscles are not damaged beyond any typical burn, and it’s theorized that the physical issues with the affected limbs are purely psychosomatic. [6]

CHAPTER II

TORO INCIDENTS

2.1 KIORI ISHIIN

Burn location: Lower right leg.

Obtained by a wild pixelmon during a field observation of Houndoom when the victim was 22 years of age. A territory dispute was occurring between a runt-sized Houndoom and an enormous-sized dominant male. Of the known victims, this is the only one that had their disease be obtained by wild pixelmon. A Zoroark had also been burned during the incident.

The Zoroark was 13 years of age, and suffered burns and the toxin to his right arm and face. A healer machine and a checkover by a Nurse Joy confirmed that the Zoroark was entirely free from pain or any complication. To this day, the Zoroark reports no pain from the burn or any markings from the incident.

Medical treatment was not immediately available or sought in this case, due to personal conflicts at the time of the incident. Victim treated themselves at home with bandages, aloe, and various liquids to counteract the pain. Morphine was later obtained to help relieve the pain.. The burn was second degree, and has since scarred decently. An estimated 75% of the nerves located in the leg have been destroyed.

Action provided by one Meyn Mielke helped prevent further infection or damage from the burn. There had been approximately 9 flare ups in the last five years, with pain ranging from minimal to incapacitating. A cane has been used to help with balance issues, but was not required to keep standing. It was from this incident that work on this thesis began, after discovering no

proper cure had been found.

The offending Houndoom had been later captured for study. They have shown remorse for their actions since.

2.2 ALICE STAR

Burn location: Left ankle

Obtained by a trainer's pixelmon when the victim was an estimated 17 years of age. The burn was incurred during a dispute with a trainer in possession of a domesticated houndoom.. The result was a burn to the girl's ankle. This was not deemed a purposeful act by the trainer, but by the independent actions of a Houndoom attempting to protect his owner and to get the victim to vacate the premises.

The ankle has been reported to have proper function without restriction of movement. However, pain has been reported to the typical extremes to where sleep is often disrupted. The victim has opted to ride her pixelmon rather than to walk, has mentioned a correlation between stressing the muscles around the affected areas and flare ups.

She was immediately treated by the doctors and nurses at Aurelia hospital, and was given a pain medication injection for pain at the time of the incident. She has since been placed on oral pain medication, and taking oral herbal remedies at home. These report average success.

The offending Houndoom has not shown remorse, but their trainer has.

2.3 VLAD TUDOR

Burn location: Right forearm.

Obtained by his own Houndoom during a dispute. The burn was immense and took his right forearm.

He remained in place for several minutes before he was found and taken to Aurelia hospital for treatment. He was given pain medication injection, and prescribed oral pain medication. His pain, due to location, has been rated highly severe, with reported two flare ups within the last year. His Houndoom has expressed remorse and has had their venom inspected alongside the one from Kiori's. The venom was similar in structure and abundance, just as all previous studies will have reflected.

Vlad has reported limited functionality with the affected arm as well as the recurring pain issues that are typical for the disease. Vlad is reportedly handling the intense flare ups better than most. A cast was kept on his arm for two seasons to help the flesh heal.

CHAPTER III

TREATING THE DESTROYED NERVES

3.1 DOCTOR ORSAI

Doctor Orsai is a biologist hailing from the Johto Region, working primarily from Goldenrod City. They, like several others before her and alongside her, have studied Hexoom directly. It was through her that the neurotoxin obtained its name. Her work focused on the thin shield the toxin would form over the nerve, and had the most progress in terms of creating an antivenom.

She had developed the “Flame Drain” technique,[7] which is now the only known method of collecting toxin from a Houndoom before it latches onto a victim’s nerves. This method involves having a trained Houndoom use the move ‘Ember’ into a glass spherical chamber. Once enough fire has filled the chamber, it is sealed airtight. The fire will snuff out, leaving only raw toxin behind for collection, usually in the amount of a small drop. This is only done in very small doses at the current time, though plans are in place for a larger chamber to be constructed in a few years time. Though this extraction technique is successful, the antivenom is still in development.

3.2 ANTIVENOM DEVELOPMENT

While this route seems the most obvious course of action to take as far as the public is concerned, the fact remains that antivenoms cannot repair damage that has been done. An

antivenom is slow to create, especially with the low yield Orsai's patented Flame Drain milking technique. Only after a decent sample is created can it be diluted through lab work, then injected into a pixelmon such as Chansey or Blissey. The pixelmon's body begins to create antibodies to attempt to combat the neurotoxin, and those are extracted before the pixelmon is sent to a healer.

Small yield, large amount of labwork, and slow to harvest. This is an ineffective way to even gather a supposed cure. With how quickly the neurotoxin completes its work upon a victim's nerves, the only possible way for an antivenom to work is if it is injected immediately after obtaining the burn. Orsai's work is not yet conclusive about temperature sensitivity of the antivenom. If it relies on keeping above or below room temperature, it lowers the chances significantly for having a positive result.

However, lab results have begun to show that it has some effect if given in a timely, controlled manner. It is surmised that it will be time yet before more results are shown.

3.3 PROFESSOR CALIM

Professor Calim of Sinnoh has shown tremendous respect for fire type pixelmon, with a keen eye on Houndoom's unique flame. After working with Doctor Orsai, he had begun trying an alternative method in terms of using natural medicines already available and trying to craft a hybrid.

He has several Houndoom of varying ages and sizes within his collection, and has been collecting and observing samples from wild pixelmon in his region, namely Valor Lakefront. He has a specialty in chemistry, which prompted his train of research in terms of a cure. His work took him to Hoenn on several occasions to help with burn victims that were mentioned in the

above graph.

3.4 BURN HEAL AND ALOE HYBRID

Professor Calim attempted to purge the neurotoxin free from the body by using a mixture of burn heal and aloe. In his notes, he stated that a Burn Heal was able to cure a pixelmon inflicted with the Houndoom burn to a factor of 90%. Working under this hypothesis, he attempted to find ways for a Burn Heal to work upon people, using the aid of the widely-used plant aloe vera.

He came to a minor success with the hybrid, able to alter the chemical composition of a commercially bought Burn Heal to where it showed some success upon a burn upon a human arm, the degree of the burn minimizing and a metabolism rate increase as the skin healed at an increased rate of 10%. The aloe component helped with the pain relief for a short while. However, there was a drawback when it was discovered that the altered Burn Heal made undamaged nerves in the area spasm painfully a few days later, making the reported pain in the damaged nerves more severe. The skin exhibited discoloration as well, seeming to turn a shade of blue, despite proper oxygen levels to the area. [8]

3.5 NEURECTOMY

The only perceived successful treatment to a degree, though it comes only for the most extreme cases and has its own set of risks. The surgical removal of nerves is reserved for those that have flare ups more than four times a year, or those whose pain has become so chronic that they can no longer function. This is done only by a neurosurgeon, and only if traditional pain

medication has provided no relief.

The risks of surgery is the same as all other surgical procedure, as well as the risk of developing a growth on the nerve called a neuroma. Complete removal is a tricky business, but a required one. If the nerve is simply severed in the surgery and left there, the pain has been reported to come back as powerfully as before immediately, giving the assumption that the toxin remains in the dead nerve, no matter how long ago the damage occurred.

However, there also runs a major risk that a new, more intense pain will develop after surgery in the span of months to years after the event. The cause of this is currently not known, and it is for this reason that it is avoided unless it is done for the most extreme of sufferers. [9][10]

CHAPTER IV

INCURABLE DISEASE, SOLVABLE SYMPTOMS

4.1 “PHANTOM NERVE” PAIN AND ITS EFFECTS

As previously mentioned, the pain resulting from the Houndoom Necroneuropathy is akin to the well-known phantom limb pain phenomena from amputation patients. However, unlike that condition, the source of the pain remains in the area. Victims report the feeling of ‘non stop burning’ when the pain is at its worst. At minimal, the pain mimics that of exposing the area to hot water. It has been known to have certain psychological effects in very extreme cases, such as: insomnia, lowered self esteem, decreased appetite, hallucinations, depression, anxiety, and paranoia.

Despite the nerve being completely destroyed, the toxin has the body stay in a state of panic, as if the injury is fresh. This is the source of the pain, as the toxin remains attached to those dead nerve cells. What stands out the most, as is true for most chronic pain sufferers, is a sense of hopelessness and despair that there will be no relief for them. That leads us to my point entirely.

4.2 NERVE BLOCK

The plain and simple truth to it all is that one cannot bring back what is dead. The toxin destroys the nerves within five minutes of initial contact. Unless the antivenom is found and there is a way to administer it to people the moment the injury occurs, this problem will remain. I

propose that people have been too focused on the cure, not the symptoms. After observing pain injections given upon first treatment to dull the pain of the burn, it was hypothesized that a localized neural depression agent might be the cure. This compound will be hereon referred to as a “pain block”.

Normally, a pain block is used for those of chronic pain such as back or joint discomfort. The purpose of these blocks is to halt the propagation of neural impulses from the affected area to the brain. It is a combination of chemicals that brings relief to the area within the matter of hours to days, and can last a period of one to two years with proper administration of the drug.

They typically administered via injections, thus eliminating the need for surgery or a hospital stay.. Should this compound function similarly to existing nerve blocks, it could potentially serve as a lifelong method to suppress the effects of the disease while a cure, or something more permanent, is synthesized. Return visits can always be scheduled with the region’s doctor, and the drug is cheap to obtain.

Side effects of nerve blocks are minimal. Those with diabetes may need to carefully watch their blood sugar with this drug. Other symptoms range from itchiness of the injection site, to weight gain, minor rash, soreness. In the extremely rare case, death can occur if the person is unknowingly allergic to the ingredients within the nerve block. Testing before having these injections is cautioned.

Nerve blocks are not yet currently being used for Houndoom Necroneuropathy disease, but I propose that we immediately attempt this technique. It has worked splendidly for those suffering from chronic pain that oral medication cannot seem to stop. Should this prove

successful, we have a proper clinical way to handle the disease that is easily monitored and have scheduled injection times.

CONCLUSION

We cannot cure Houndoom Necroneuropathy, but we can halt its debilitating effects that prevent people from living happy, healthy lives. The issue is simply dead nerves and false responses from them. A Nerve Block, commonly used for chronic back and joint pain, could very well be the key to saving many lives. It's easy to obtain, cheap to make, and easy to monitor with regular doctor appointments.

No need for surgery or dangerous new chemicals. It's been sitting on a shelf this entire time.

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Title page: Houndoom is credited to siriuslylostwerewolf on Deviant Art