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Since I Know Myself: A Cultural Examination of Medicinal Plant Use in the Commonwealth of Dominica

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SINCE I KNOW MYSELF:
A CULTURAL EXAMINATION OF MEDICINAL PLANT USE IN THE COMMONWEALTH OF DOMINICA

by

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THESIS

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Dedication

To Kaya

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ABSTRACT

This research examines Dominican culture through exploring medicinal plant use on the island. Dominica, located in the Lesser Antilles of the Caribbean Archipelago, offers a distinctive setting because historically there has been an amalgamation of cultures that have participated in and influenced the formation of Dominican culture. This research sought to identify what plants were known and used on the island in order to assess cultural retention and syncretism that has evolved as a result of the comingling of these cultures. In so doing, it was evident that environmental knowledge gained through experience has been critical for survival throughout Dominican history. The role of weedy species, the everyday use of teas, as well as the salience of species and their use hint at the creation of cultural identity. This research was conducted in five locations on the western side of Dominica. Qualitative methods in the form of semi-structured interviews were used and the informants were acquired through snowball and random sampling techniques. Fifteen people were interviewed of which four were women and eleven men. These interviews provided an opportunity to learn through interaction about Dominican culture and at the same time collect medicinal plant information. However, it was through the analysis that Dominican knowledge pertaining to medicinal plants and their use was deciphered. The data was analyzed through categorization within excel spreadsheets. The spreadsheets

distinguished the plant's common name, the Patwa/ Kwèyól name, scientific name, plant family, location where it was harvested, part of plant used, illnesses treated, and the form in which it was administered. Medicinal plant use on the island of Dominica has evolved over time. The various influences—cultural and environmental—have impacted the knowledge surrounding what and how specific plants are used through the histories that have manifested themselves on this island. These narratives of how people use plants, why they use them, and how this knowledge came to be, reveals important aspects of Dominican culture which contribute to the exploration of cultural influences in the creation of Caribbean identities.

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Chapter 1

Introduction

Often when people think of the Caribbean, images of white sand beaches, crystal clear blue waters—a tropical paradise with a laid back culture—comes to mind; however the physical landscapes and cultures found within this region are much more diverse than what these generalizations depict. The Caribbean's recent history, in the past 400 years, has been marked by European colonization. With colonization came the decimation of Amerindian populations and the implementation of African slavery. As a result, people from many different cultures came into contact with one another. Through interaction people would exchange information and knowledge that would influence the creation of each island's culture and customs (Mintz and Price, 1976).

The physical environments in the Caribbean offer an array of natural resources that the various Amerindian groups—Tainos, Arawaks, and Caribs—were efficient at exploiting prior to the arrival of Columbus. They were renowned fishermen, able to navigate the sea and gather fish from various locations, and were using the environment for the cultivation of agriculture and harvesting of wild fruit. (Honychurch 1995). The development and colonization of the Caribbean was facilitated by the availability of arable land. The Greater Antilles, the largest islands in the Caribbean, had large tracts of land available for cultivation and thus became large sugar producing colonies. On the other hand, the Lesser Antilles had less arable land, steeper slopes, and were mostly of volcanic origin. Yet on each of these islands the colonial powers developed plantations for the exploitation of cash crops, particularly sugarcane.

The fertile land of the Caribbean, the tropical climate, and free African labor allowed these colonies to produce sugar at low prices In addition to the low cost, these colonies were able to produce copious amounts making the Caribbean the largest producer of sugarcane throughout the world. Thus, it was through the cultivation of plants, that European countries gained wealth and economic power. In contrast, the slave laborers—African, Native American, or South Asian—had a dependence on and relationship with plants based on physical survival, subsistence, and medicine.

Upon arrival in the Caribbean, the people and cultures from which they came influenced the ways that they adapted to their environment. The historical, social, and environmental diversity is a unifying factor found within the Caribbean (Alleyne 2003), yet at the same time the different colonial powers, native prehistory, and diverse African cultures that influence the make-up on the islands distinctly differentiates each one. Dominica, located in the Lesser Antilles of the Caribbean Archipelago, offers a distinctive setting to examine cultural influence because historically there has been an amalgamation of cultures that has participated in and influenced the formation of Dominican culture.

In terms of colonial history, the French and British fought over the island of Dominica from 1699 until 1763 when it was finally ceded to the British at the end of the Seven Years War (Honychurch 1995, Rose 2009). Prior to Dominica becoming a British colony in 1763, it remained neutral under treaties. At the same time it was a refuge for other Amerindians, Maroons, French families, and Caribs (Lenik 2012). Under British colonial rule, large populations of African slaves were transported to the island in hopes of establishing large plantations. However, the island's topography was not conducive for large-scale plantations.

Africans who arrived in the Caribbean possessed personal knowledge and beliefs that would influence their experiences and the creation of Caribbean cultures (Laguere 1987, Hall 1990). The commonality experienced by most Africans in the New World was bondage. It was under the confinement of slavery that African traditions fused, creating the diverse black cultures found throughout the Atlantic world today (Carney and Voeks 2003).

African botanical knowledge regarding food and medicine was instrumental in the creation of these Diaspora communities and remains culturally important today (Carney 2003: Carney and Voeks 2003; Carney & Rosomoff 2009). Furthermore, medicinal practices and their importance within Caribbean societies speaks to cultural creation and offers a way to examine how cultures adapt to their environment (Van Andel et. al. 2012, Voeks 2009).

Throughout the world seventy percent of the global population regularly uses medicinal plants (Pei 2001). Traditional medicine is a main form of healthcare in developing countries. Dominica's rural population has been known to use herbal medicine as their first response (Quinlan and Quinlan 2007). To date, few studies have examined the cultural influences in the human-plant relationships surrounding medicinal plant use and those that do focus primarily on eastern side of Dominica, where the majority of the indigenous Carib population live (Quinlan 2004, Quinlan and Quinlan 2007). However, this research was conducted along the western coast of Dominica (Figure 1).

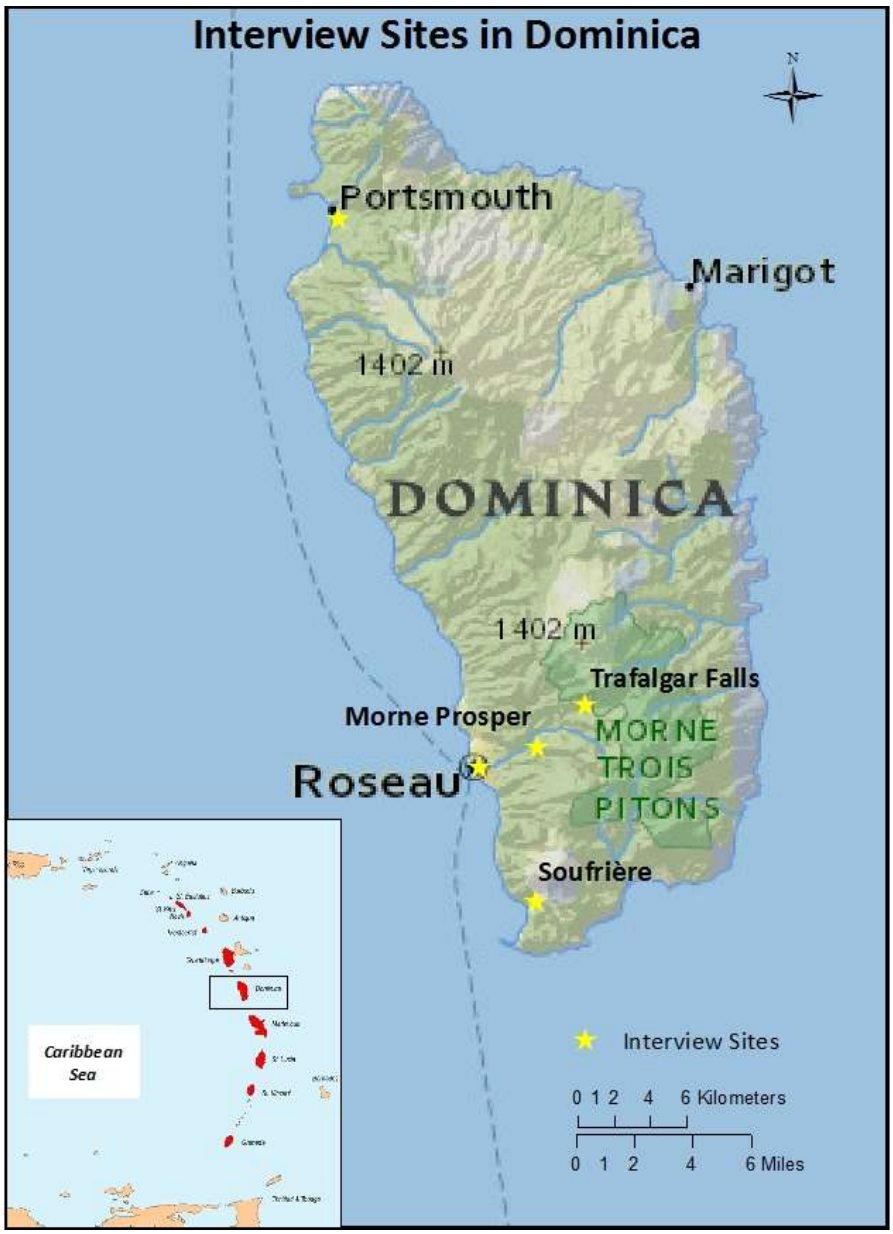


Figure 1: Map of the Interview Sites in Dominica. Produced by Maureen Meyer and Sandy Daras

The following thesis examines cultural heritages of Dominican medicinal plant use. The physical topography of Dominica, including the numerous plants available, have been part of Dominican culture throughout history. Within this research, these relationships—people, medicinal plants, and the environment—are examined. This research sought to identify what plants were known and used in order to assess the cultural retention and

syncretism that has evolved as a result of the comingling of cultures. In addition, all of these aspects—knowledge of the environment, medicinal plants, frequency of use, availability of species—are part of Dominican culture and an aspect of current Dominican nationality.

Chapter 2

Literature Review

This thesis contributes to three bodies of literature with a study of human-plant relationships that focuses on understanding cultural adaptations to the environment in the Caribbean. First, it supports the scholarship regarding African contributions throughout the New World landscape. Second, it examines general topics in ethnobotany that align with the scholarship that discuss the importance of herbal pharmacopeias found in disturbed areas. Third, it adds to the scholarship regarding the creation of Caribbean identity through elaborating on the cultural composition and construction found within the Caribbean, specifically in Dominica.

2.1 African Contributions in the New World Landscape

Between the 16th and 19th centuries, African slaves made up the majority of people who arrived in the New World (Carney and Voeks 2003, Voeks 1993). African-descent groups currently make up the majority of the populations, specifically in the Caribbean. However, Africans have been obscured as contributors in the creation of these landscapes. Recent scholarship on the subject has begun to illustrate how African knowledge, especially regarding agricultural practices and healing plants, was fundamental to the development and creation of African Diaspora communities today (Carney 2003, Carney and Rosomoff 2009, Carney and Voeks 2003, Duvall 2009, Laguerre 1987, Sluyter 2010, Patterson and Kelly 2000, Voeks 1993).

In deciphering medicinal floras and pharmacopeias of the African Diaspora, scholars have begun to interpret how these practices persisted in the New World by examining: the dominance of Old World species within present day Caribbean herbal pharmacopeias (Carney 2003, Carney and Rosomoff 2009), the plant composition of

aphrodisiac mixtures in Africa and the Caribbean (Van Andel et al. 2012), the role of place in fostering the continuation of plant knowledge (Voeks 1993), and how floristic homogenization (i.e. the introduction of botanical flora from the Old World) was fostered in humanized landscapes, especially near plantations, slave quarters, and within slave home gardens (Voeks 2013). These examples highlight particular instances of how cultural practices persisted, yet the common thread within the scholarship illuminates how Africans, as botanical agents, were responsible for the preservation of the African cultural influences in herbal pharmacopeias found within African Diaspora communities and cultures in the Atlantic World (Carney and Voeks 2003).

Scholars have perceived the Middle Passage as a moment of transformation for Africans due to both alienation and disorientation (Gomez 2005). Some scholars have focused on highlighting traditions as cultural survivals and identifying that Africans underwent an acculturation process within the New World (Herskovits 1941). The counter argument stated by scholars is that 'African culture' cannot be generalized under one category. The diversity—socially, politically, and environmentally—from which Africans arose is as diverse as the environments and cultures that would develop throughout the New World (Mintz and Price 1992). This focus tends to highlight the transformation of knowledge through the 'creolization' of the Caribbean.

The loss of specific ethnic and cultural characteristics known to slaves prior to their arrival in the New World is acknowledged (Alleyne 2003), yet other scholars recognize that Europeans were unable to deprive Africans of their previous knowledge and memories (Laguerre 1987). The literature states that collective memories influenced how Africans adapted to their new ecological environment and cultivated plants for subsistence (Wilkie

1996), in the form of resistance, such as live fencing practices in maroon communities (Duvall 2009), and in preparing and utilizing certain types of plants and mixtures as medicine (Van Andel et al. 2012).

The flora found throughout New World landscape is similar to those found in the western coast of Africa, yet not identical (Wilkie 1996). However, Africans made use of characteristics associated with cultural flexibility (Mantz 2007) and adaptability (Carney and Voeks 2003, Laguerre 1987) to overcome barriers imposed on them as slaves in a foreign land. The scholarship recognizes the re-creation of African plant-human relationships in various forms as examples of these characteristics. For one, Africans used plants of similar taxonomies for parallel uses. The literature states that plants within the same genus but having different species were used as poisons, tranquilizers, or medicines (Carney 2003), in religious practices (Voeks 1997, 2009, 2013), and in the construction of live fences (Duvall 2009). In addition, the literature describes how African Diaspora herbal pharmacopeias were influenced by the exchange of information with Amerindians (Conniff and Davis 1994) and through trial and error (Duvall 2009, Laguerre 1987, Voeks 1993).

Through examining African material culture—which plants, what they are associated with, and how they are used—scholars have been able to examine symbols and practices that can be reflective of African traditions. Subsistence farming on provision grounds (plots in which slaves produced food for themselves) provided an opportunity for slaves to impart traditional dietary preferences, create additional food security, and initiate a botanical legacy (Carney and Rosomoff 2009). African food staples such as African rice, okra, black-eyed peas, and oil-palm have been found to dominate New World African gardens that demonstrate the continuation of African traditions. (Carney and Voeks 2003).

Horticultural knowledge surrounding intercropping of plants and use of pigeon pea borders in subsistence gardens (Berleant-Schiller and Pulsipher 1986) and use of plant cuttings in the construction of live fence borders (Duvall 2009) are ways in which scholars have begun to acknowledge African influence and preservation. Additionally, plant origin has been used by scholars to ascertain cultural influence and knowledge retention. For example, some plant species utilized in the Caribbean originated in Asia. However, as a result of the Monsoon Trade—Indian Oceanic trading network—many of these species were first introduced and cultivated in Africa prior to the Atlantic slave trade (Carney 2003, Carney and Rosomoff 2009, Voeks 1993, 2013).

Medicinal plants are extremely important in both Africa and throughout the Americas, both historically and today (Carney and Elias 2006, Carney and Voeks 2003, Peter 2013, Quinlan 2005, Voeks 1993). Africans arriving in the Americas came from a diversity of ethnicities (Alleyne 2003, Mintz and Price 1992), with different cultural characteristics. However all of these cultures included plant use, particularly herbal medicine. Scholars associate plants that are being used in similar ways in African and the Caribbean with the preservation of an African cultural heritage (McClure 1982, Mitchell 2011).

The literature links particular species of plants used for healing, magic, and religious practices on both sides of the Atlantic to illustrate retention and contributions (Conniff and Davis 1994, Peter 2013, Voeks 1993). In addition, the importance of root doctors in the Caribbean is shown to be a cultural trait brought from African and instituted as part of the healing traditions in the Americas (Wilkie 1996, Laguerre 1987). The majority of these studies focus on other countries: Jamaica (Fox 1995), Dominican

Republic (Vandebroek 2010, Van Andel 2012), Suriname (Van Andel and Westers 2010), and Brazil (Voeks 1993, 1997, 2007, 2013). In Dominica there have been no studies that connect plant use to the cultural retention, influence, and syncretism that evolved through the original settlement and persistence of African communities. My research assists in filling this knowledge gap and specifies plant-human relationships on the western side of Dominica.

2.2 Ethnobotany and Disturbance Ecology

Plants provide food, shelter, medicine, and other materials on which humans depend for survival (Alcorn 1995, Minnis 2000, Johns 2000). Recently, social and physical scientists have begun to explore the complexities of relationships among humans, cultures, and plants under one scientific discipline, ethnobotany. Ethnobotany, first coined by J.W. Harshberger (1896), examined the use of plants for food, shelter, and clothing by indigenous cultures, as well as highlighted the distribution of species which allowed for the recognition of trade routes. The foci of the discipline is taken from these core ideas; resulting in the understanding of how plants are utilized (Johns 1990, 2000). In addition, ethnobotany has been used to document facts about plant use and management, and to define, describe, and investigate these roles and processes (Alcorn 1995).

Scholars have found that human-plant relationships are not static or simple, but are complex and ever-changing (Alcorn 1995). In addition it has been pushed by scholars to include cross-disciplinary methods in order to evaluate these relationships over a continuum (Davis 1995, Johns 2000, Prance 1995). Plant exploitation has been at the root of human dietary and medicinal practices since the beginning of history. It is argued that use of plants as food is how medicines were discovered (Johns 1990). Historically, it is

difficult to ascertain the medical application of plants prior to written records, yet it is inconclusive to disregard the possible use of plants as medicine (Dunmire and Tierney 1997). With the exchange of plants that has occurred throughout history, there is a likelihood that medicinal practices have also been exchanged (Timbrook 1999).

In researching medicinal plants, scholars have looked specifically at ethnomedicine, which examines beliefs, perceptions, and the cumulative knowledge surrounding disease and healing practices which is a direct result of cultural development within a particular place (Foster and Anderson 1978). How people recognize health conditions and utilize these medical systems illuminates cultural ways because it is often localized in context and embedded in the everyday lives of people (Erickson 2008, Gragson and Blount 1999, Voeks 2009).

The importance and use of traditional medicine in Africa and the Americas have led scholars to examine knowledge as a means of understanding cultural diffusion (McClure 1982, Voeks 1993). Historically, Europeans discredited the amount of plant knowledge that slave and Amerindian populations held (Schiebinger 2004). The literature on medicinal knowledge within the Caribbean and African Diaspora in the New World highlights how it is retained, lost, transformed, perceived, and diffused (Gomez 2005, Laguerre 1987, Voeks 2003). The preference and continued use of certain species of African origin illustrate their importance within the transformed environment (Carney 2003, Carney and Voeks 2003, McClure 1982, Voeks 2013, Peter 2013). These critical areas recognize the complexities involved in African Diaspora medicinal plant use and the influence that Africans had in the creation of landscapes, cultures, and communities (Voeks 2003, Gomez 2005).

The burgeoning scholarship and literature surrounding medicinal plant use has brought to light important human-plant interactions within the Caribbean region. Studies highlight the use of medicinal plants through comparing plants used in Africa and the Caribbean (Carney 2003, McClure 1982), examining the relationship between people and the landscape (Carney and Voeks 2003), specific plants used to treat intestinal worms (Quinlan et al. 2002), make-up and use of *botellas*, root tonics, in Dominican culture (Vandebroek et al. 2009), importance of herbal remedies in Caribbean migrant communities (Van Andel and Westers 2010), components of bitter tonics (Van Andel et al. 2012), and sacred plants used in African diaspora religions (Voeks 1993). An objective of medicinal plant research is to examine people-plant interactions in such a way as to better understand how these traditions affect the health of communities (Quinlan et al. 2002).

Many cultures throughout the world have herbal pharmacopeias that treat widely encountered medical conditions, such as skin irritations, wounds, diarrhea, headache, fevers, colds, and eye problems (Johns 1990). The plants that make up these pharmacopeias usually are localized in specific areas. Knowledge of the local environment is critical for understanding how to utilize the medicinal resources found within it (Morgon 1995). Medicinal plant use reflects local biodiversity and knowledge of the local environment (Alcorn 1995, Kay 1996, Van Andel et al. 2012).

Humans affect plant availability through species introductions. For example, European botanical gardens were instrumental in transporting species to predominantly tropical areas worldwide (Harris 2010, Morgon 1995). The majority of these species were likely food crops or plants with some kind of economic value. Although for the European much of it was based on economic prosperity, these plants would be utilized by the general

population of either slaves or freed people for both food and medicine. In addition, disturbed sites, which often harbor weedy species, have become important in examining medicinal plant use (McCarthy 2001, Pfeiffer and Voeks 2008, Stepp and Moerman 2001, Stepp 2004, Voeks 2013).

The literature that focuses on the use of weeds as medicine examines both the cultural and environmental impacts that determine why these species in particular are being used. Weedy species have abiotic and biotic features that allow them to adapt to a variety of environments (Pfieffer and Voeks 2008). Humanized landscapes are disturbed areas where these species thrive and important species are often accessible and in abundance (Stepp and Moerman 2001, Voeks 2004). In researching Brazilian cultures (Voeks 1996, Voeks 2013) and the Haustec Maya in Mexico (Alcorn 2000), there is evidence that access to plants impacts use. The development of culture is impacted by the physical environment, and the culturally significant plants that are encountered and utilized within these disturbed landscapes allow for cultural continuity even in diaspora communities (Pfeiffer and Voeks 2008).

2.3 Caribbean Identity and Medicinal Plants

Over the past half-century, scholars have increasingly recognized that numerous cultures have influenced current Caribbean culture (Hall 2001). According to Trouillot (1992: 20), the Caribbean is a place where the Europeans "achieved the systematic destruction of the other," meaning that the indigenous populations were predominantly wiped out early, to be replaced by forced laborers of African descent. Yet, Africans connected through the common bond of slavery. While adapting within this new oppressive environment, cultural traditions were blended to create a creole culture.

The diverse cultures, landscapes, and histories of the Caribbean make each island unique. Simultaneously, similar characteristics unify the region; such as every Caribbean island was colonized, the majority of the Amerindian populations decimated, African slaves introduced, and creole cultures created as a result of the mixing of people who inhabited the island (Alleyne 2003). Africa is a unifying factor of the past (Hall 2001), yet the various cultures from which Africans came and arrived in the New World are distinct from one another (Mintz and Price 1992). The distinctive traditions of each person were incorporated into their daily lives; however, in Caribbean societies languages merged, traditions blended, and the cultures evolved into creole societies that today are distinct from one another.

Identity is often associated with origin (Hall 2001); however it is extremely hard to find the exact origins of the African slaves who arrived in this area. Beyond just origins, Africans were confronted with loss of culture prior to arriving in the Americans. Mintz and Price (1992) note that the mixing of cultures in the slave trading posts on the African coast presented an unfamiliar setting and affected the socio-cultural patterns that would later influence the construction of creole societies. Historically, it has been difficult for individuals and cultures to construct an identity within this area because definitions were often imposed on them from the outside, many felt a loss of culture, and the majority were grouped under hegemonic terms such as "blacks" (Alleyne 2003).

Identity, specifically Caribbean identity, has been described as a process that is flexible, fluid, and variable. The transformation that creole populations in the Caribbean have undergone since their inception after 1492 exemplifies the continual process of the creation of cultural identity (Hall 1990). Throughout Caribbean history it has been essential

for people to intermingle in order to survive. It was within these interactions that exchanges occurred which resulted in the creation of new cultures (Thornton 1992). Yet, once again cultural "traits" are not static, but continuously transform along a time and migration continuum which has impacted Caribbean societies historically and today (Hall 2001, Mintz and Price 1992, Thornton 1992).

The transformations within Caribbean societies have been continuous, and difference does matter in the Caribbean (Hall 2001). How exactly have these cultures changed? According to Thornton (1992) there are two ways in which cultures change: 1) through their own internal dynamics and 2) through the constant interaction with others. The ways in which each colony in the New World functioned were based on political and economic factors associated with the colonial power. The political and social dynamics under which Africans arrived as slaves, in addition to the necessity to interact with other cultures socially, altered the cultures in the Caribbean, more broadly in the Americas.

In the 16th century, Europeans established plantation colonies in the Caribbean and began the importation of African slaves that would continue for three hundred years. As a result of the diversity that accompanied the continuous influx of arrivals into this region, along with the mixing that went on, creole societies began to form (Glissanta 2008). 'Creole' has been used to differentiate the birthplace and ethnic heritage of European and African children from their parents (Stewart 2010). Furthermore, Caribbean languages have been a focal point for scholars to understand the cultural mixing and hybridity that has gone on in these societies. Within creole languages at least two forms of linguistic traditions are combined to form a new language. In the Caribbean, as people from multiple cultures came into contact with each other—peacefully or through conflict—traditions,

knowledge, and experiences merged forming creole cultures in a process similar to the process of creating creole languages (Glissanta 2008).

Food is socially and culturally constructed (Meigs 1987). The ways in which people think about and categorize food has cultural value. Thus, foods, whether plants or specific dishes, are often associated with social meanings, and through their consumption we symbolically integrate them into our identities (Garth 2013). Food is a critical aspect within Dominican society because many of the citizens are subsistence farmers. However, there are also many instances when food plants are acknowledged and used for medicinal purposes.

2.4 Distinguished Threads within the Research

The important threads that influence this research highlight how African slaves utilizing prior knowledge and memories and, at the same time demonstrating their ability to be flexible, adapt to and influence New World societies. The recent African ancestry that is found throughout the Caribbean illustrates the need to acknowledge African cultural contributions. Discussions surrounding human-plant relationships found within the Caribbean, focusing on species used for medicine, food, and sometimes as material, allow us, as scholars, to understand how cultures interact with their environment. These interactions are based on knowledge of the local environment which has evolved over the course of centuries and through the amalgamation of cultures. The overarching themes are fostered by the knowledge of the environment from which these cultures develop. The use of weedy species for medicine is a result of the blending of cultural traits and knowledge and can be correlated with the creation of cultures and identity.

In this research I sought to understand the availability and use of medicinal plants on the island of Dominica. In order to accomplish this, I realized there are other factors that need to be acknowledged and addressed in seeking understanding. One of these is the relationship that Dominicans have with the physical environment and how it has impacted use and knowledge throughout history up to the present. In examining this relationship we have to look at the people, and their cultures who have participated in and influenced the cultural make-up on the island. What continent/ culture did they come from? Where do the actual plant species that are used grow? What allows them to survive in these areas? Why have people chosen to use these species in particular? Dominica is a tropical island where plants grow prolifically, so, why is it that the majority of plants I encountered for use are readily available along roadsides and in gardens? What does understanding the relationship that Dominicans have with the environment in which they live, along with the use of species, say about the culture?

Research Question

The question that guides this research is "What cultural characteristics can be identified through the examination of medicinal plant use on the island of Dominica?"

Chapter 3

Methodology

3.1 Physical Description of Dominica and Study Sites

I conducted research in the Commonwealth of Dominica, the northernmost of the Windward Islands in the Caribbean archipelago. Although the island has a size of 230 square miles (251 km^2), two-thirds of the island is covered in forest with nine dormant volcanoes in the interior of the island (Peteru et al. 2010). Due to the extreme inland slopes, the majority of the population resides in settlements along the coasts. The official language of the island is English. However, the majority of the population speaks French Patwa/ Kwéyòl.

This research was conducted in five sites on the leeward side of Dominica. The towns/ villages were Roseau, Portsmouth, and Soufrière. In addition, research was conducted in Trafalgar Falls and Morne Prosper, both located within the Roseau Valley (Figure 1). We stayed in Loubiere, a town located just south of Roseau. Its close proximity to Roseau was beneficial, but ultimately impacted the access I had to certain places. In my research, traveling outside of Roseau became important for comprehending Dominican culture and medicinal plant use but was hindered by the amount of time it took to get from one place to another via buses.

Roseau, the largest city on the island with a population of 16,580, is located on the southwestern side of the island. As the main urban center on the island, many people travel here for work during the week and thus there is access to buses that travel to different cities and regions on the island (Figure 2). This research began in Roseau, but extended out to

other parts of the island. Traveling to or through Roseau was almost a daily occurrence because this was the only way to get to other areas north or northeast of Roseau.

Figure 2: Bus Stop along the Street in Roseau. Photographer: Maureen Meyer.

Portsmouth, the second largest city, is located on the northwest coast of the island on Prince Rupert Bay and Indian River (Figure 3). This area is of great historical importance because it was a major post-Columbian trading post for both the Caribs and Europeans (Honychurch 1997). Also, this is one of the only places that white sand beaches can be found on the island with a gradual incline from the coast up to the mountains. In this research, Portsmouth was significant because it is where I met a key informants whom I worked over the course of four days.

Figure 3: Picture of Prince Rupert's Bay heading west into Portsmouth. Photographer: Maureen Meyer.

The three other places where I conducted research were located in mountain valleys. Trafalgar Falls and Morne Prosper were located in the Roseau valley where the topography is jagged and full of various natural resources. These towns are located adjacent to the Morne Trois Piton World Heritage site (Figure 4). There are numerous ecological attractions located near here, including: Trafalgar Falls (Figure 5), Fresh Water Lake, the Boiling Lake, and Wotten Waven hot springs.

Figure 4: Image of looking down the Roseau Valley. Photographer: Maureen Meyer

Figure 5: Image of Trafalgar Falls taken from town of Trafalgar. Photographer: Maureen Meyer.

Soufrière, a small fishing village south of Loubiere, is located in a mountain valley. Although the mountains are steep, the valley provide tracts of arable land (Figure 6). The relatively flat land around people's houses mean that food can be grown in close proximity. In addition, Soufrière is also home to one of the largest *Citrus aurantiifolia* (lime) plantations on the island; however much of this has been reforested and is now part of the Morne Trios National Park. Although each of these places has unique geographical features, many of the same species of plants are common in yards and along roadsides.

Figure 6: Picture of Mountains in Soufrière. Photographer: Maureen Meyer

The mountainous terrain and natural landscapes impact the layout and structure found within each of the towns and villages in Dominica. Roseau, an urban environment, is dominated by buildings and concrete. The houses in Roseau do not have big yards, if

any. However as you moved north or south along the coast it progressively becomes more spacious. Space is a relative term because the steepness along some sections of the island mean that the houses literally extend out over the edge of cliffs. Regardless of the physical limitations imposed by terrain, it is not uncommon to see herbs, vegetables, or various fruit trees growing in people's yards.

There are a few things that can be noticed conceiving the geographical differences associated with each place where interviews were conducted. One, all of the towns where interviews were conducted have different access to arable land. Roseau, the urban center, with a large population within a small area, does not have much access to land. All of the other towns have greater access to land and less population sizes. Two, the tropical climate and high rainfall are ideal conditions for prolific plant growth. The height and steepness of the mountains, along with the rain shadow, create six different ecotones, with species unique to each one. However, there are disturbed areas within each of the various ecotones I encountered and, within these areas, many of the same species can be found. Three, Dominicans had access to similar medicinal plants because they could be found along roadsides, in cultivated plots, and everyone has some family who live somewhere in the country.

3.2 Positionality and Subjectivity

While in Dominica, I was an outsider (not coming from the group), a researcher (looking for specific information regarding medicinal plants) and a student (asking Dominicans to tell/ teach me what they know about medicinal plants). My gender and race had significant impacts on the information that I was able to collect, with whom I was able

to speak, and ultimately my interpretation of the information that I received. This research was based on my interactions with individuals and how I was perceived by Dominicans, inevitably impacted the research. I, as a white woman in a predominantly black country, attempting to talk with random people about medicinal plants, I was different. It was also challenging, at times, to balance being a mother, foreigner, and researcher in a society that has a very distinct perception of white women. Yet there were times when having my daughter with me made me feel more comfortable and allowed others to be able to relate to me and ultimately made them more open to talking with me.

Since the entire island and culture was new to me, I had to seek out what Mullings (1999) considers *positional spaces* where the interview is conducted in such a way that there is a level of trust and cooperation between both parties. Establishing trust with people was not always easy and, at times, people declined to speak with me. However, there were other times that people were interested in my work and agreed to participate. In order to create an open and safe interview setting, the majority of these interviews were conducted in public settings. Only with two informants did I go to their houses and in each of these instances there was prior discussion before these occurrences.

Understanding cultural concepts and putting them into action was extremely important for conducting research. Rose (2009: 132) describes Dominican 'consciousness' and what it means to be a moral and social adult as "the ability to behave properly in relation to others and knowing the rules of social and economic reciprocity." I discovered shortly, after taking the bus a few times, that it was important when you entered to say "Good day, afternoon, or evening" to everyone on the bus. These actions, although simple, made for more comfortable interactions.

Furthermore, some of the consciousness concepts that Rose (2009) acknowledges are associated with allowing others to be of assistance and, when someone gives a gift, you take it gladly. Dominicans, were very friendly. Our landlord, in particular, would bring us either fresh *Mangifera indica* (mango), *Carica papaya* (papaya), or baked goods. She also shared ideas and was open to providing advice about where to go or how to get to certain places. Also, many interviewees/ informants, gave us with either fruits or herbs to try in teas (Figure 7).

Figure 7: Picture of an informant getting papaya (*Carica papaya* L.) to give to us. Photographer: Maureen Meyer

3.3 Qualitative Methods

The qualitative methods were used in this research which incorporated snowball and random sampling techniques to acquire informants, as well as semi-structured interview questions. Snowball sampling is used to acquire people who are known "experts" within their community (Bryman 2008). The random sampling of informants was a way to gather the general knowledge about plants used within the community (Martin 2007). The questions were prepared prior to arriving in Dominica (see Appendix A). The initial meeting and social context in which we met affected the length of time that we spent talking, which ranged from approximately thirty minutes to as long as five hours in one day.

In total, fifteen people were interviewed, four women and eleven men. These interviews were the way in which I got to know Dominicans and through analyzing the data collected, I was able to begin to decipher Dominican knowledge pertaining to medicinal plants and their use. Cunningham (2001) acknowledges that, "individual interviews may be case studies, where the researcher gains insights from discussions with individuals who 'typify' a particular situation (26)." Interviews thus provide qualitative data with insight into human-plant relationships.

In my research, my extended and in-depth interviews were with people who represented various aspects of society. I spoke with two herbalists, a farmer, forester, nature guide, and people with other occupations. Two of the informants were known herbalists within their community, while the remaining thirteen interacted with plants in previous decades by growing up in the country, farming, or in their current occupations. The

recruitment process was two-fold: 1) snowball sampling and 2) random informal conversations (Bryman 2008, Martin 2007). In Roseau and Portsmouth, snowball sampling was used, to encounter herbalists. I began this process by asking people if they knew of any herbalists and based on the responses I was either introduced or directed to where the herbalists were located. The remaining thirteen individuals agreed to participate after an introductory informal conversation.

The informants resided in different areas along the western coast of Dominica: five from Soufrière, seven from Roseau, two from the Roseau valley and one from Portsmouth. The length of time spent interviewing each individual varied.

In order to better understand how information was gathered, let me explain in greater detail the social context in which the ethnographic interviews took place. In the following paragraphs I will describe, in greater detail, the circumstances regarding the key informants. All of the informants' names have been changed to protect privacy and adhere to the protocol established with the University of New Mexico's IRB (Institutional Review Board).

Rosie, a farmer from Morne Prosper, sold her produce at the Roseau market every other weekend. I encountered Rosie selling a variety of herbs on the first visit to the market, and asked if I could speak with her about my research. During our first interaction she explained the different herbs she was selling. Although the majority of the plants were what I would consider to be "spices" or plants that were added to flavor food in some form, she also noted the many medicinal benefits associated with each of these plants.

I returned in two weeks to visit her at the market and asked if I could come and visit her at her house, to conduct a more in-depth interview. She agreed, and the following week I went to visit with her. Our interview lasted almost two hours, during which I asked her "What are some of the medicinal plants that she knows and how does she use them?" She provided me with a list of plants and their uses. We also discussed what it was like to be a farmer in Dominica. Farmers are very poor in Dominica and the labor is strenuous. After our conversation, she showed me her garden, in which the entire yard was filled with a diverse array of plants (Figure 8).

Figure 8: Rosie in her garden. Photographer: Maureen Meyer.

Edison, an herbalist in Roseau, had a street booth in the downtown area where he sold medicines (Figure 9). Over the course of an hour and half, he told me about some of the plants he was selling. The main way he did this was by preparing a concoction of herbs

for the stomach trouble I had been experiencing. Further, he told me that I had stomach gripe, meaning I had excessive gas or inflammation in my stomach. He explained that my body was trying to adjust to the environment, but it was struggling and causing me pain. He listed the plants and their uses for me, which I recorded in my field journal.

Figure 9: Picture of *Moringa oleifera* (Moringa Tree) being sold at Edison's booth. Photographer: Maureen Meyer

Frank, a local man from Trafalgar, participated in the research after we struck up an informal conversation about why I was in Dominica. Our interview lasted for approximately two and a half hours and consisted of Frank pointing out plants along the road while we were walking to catch the bus back to Roseau. All of the plants that were

identified were growing along the road in disturbed areas. I was able to record thirty-two different plants and their uses during this time.

I discovered Oliver, an herbalist living in Portsmouth, using snowball sampling. While in Portsmouth, visiting Dr. Lennox Honychurch, I asked some individuals if they knew of any herbalists in town. One woman said yes and was willing to introduce us. Oliver agreed to work with me after our initial meeting. We spent four different days working together. The interviews with Oliver began once we arrived at his house, minus our first day of working together. Our conversation would begin informally, and then we would set into examining the pictures taken from the time before. After looking at the picture, Oliver would provide a common or Patwa/ Kwéyòl name, and then describe what it treats, method of production, and the part of the plant used. Our work together on this task was usually around an hour long. After this we would go walking. Along the road, he would point out plants and I would take photographs to examine later (Figure 10). During the third interview, we gathered personal testimonies from previous patients of Oliver's. The individuals provided accounts of Oliver using herbs to cure their ailments.

Figure 10: Picture of Oliver and I doing our plant walk. Photographer: Kaya Avery.

The remaining informants were all selected after striking up informal conversations in Roseau and Soufrière. Geographically speaking, I spent the majority of my time in the southwestern part of the country and these two places were easily accessible. These interviews lasted anywhere from twenty minutes to an hour. I began these interviews with the questions available in Appendix A, but people would often provide further and more in-depth information depending on where and when the questions were asked. If time and space provided they would point plants out to me and often gather food for me to bring home (Figure 11).

Figure 11: Informant Gathering Food in a Garden. Photographer: Maureen Meyer.

3.4 Data Analysis

The data for this research was analyzed by creating Excel spreadsheets to categorize the data. I first began with two different spreadsheets: 1) specifically for the information I collected from Rosie, Edison, Frank, and Oliver who all provided me with unique interview and 2) for the remaining individuals whose interviews were shorter and more straightforward. The spreadsheets distinguished the plant's common name, what it is called in Patwa or Kwèyól, scientific name, plant family, location where it was harvested, part of plant used, illnesses treated, and in what form it was most likely administered.

Many of the informants did not know the scientific name for all of the plants, thus I had to piece information together once I returned from the field. The casualness of these interactions made it difficult to collect herbarium specimens. Acknowledging this, the information provided by each individual has been utilized to highlight cultural perceptions and adaptations that can be distinguished through examining medicinal plants. In order to determine the scientific name of the plants that were discussed by the informants, books written by Dominicans or about Dominica's flora were cross referenced to distinguish the common and Patwa names provided regarding particular species. These books consisted of: *Flora of Dominica Part 2: Dicotyledonea* (Nicolson et al. 1991), *Playing with Plants in the Nature Isle, An Illustrated Guide to Dominica's Botanic Gardens* (James 2011), *Flora and Fauna of Cabrits National Park, Dominica* (James 2004), *Caribbean Wild Plants and their Uses* (Honychurch 1986), and *The Healer is Here* (Disciple Ceasar 1980). Each of these books contains either lists at the end or common/ Patwa names along with scientific names. Penelope Honychurch's book along with Disciple Caesar's contained

drawings of each plant, allowing for the ability to cross reference some of my pictures with these plants.

Tropicos.org, a searchable database provided by the Missouri Botanical Garden was used to determine the plant families. The location of where plants were collected was either provided by the informant, if the interview was not conducted in the vicinity to encounter the plant, or it was acknowledged by site when pointed out to me while walking down a road. The informants would usually provide the part of the plant (fruit, leaf, root, stem, or entire plant) that was used. These plants were all used in a variety of ways, but the most salient use was as a tea. With teas, they were either made by decoction or infusion. Decoctions were made by specific plant parts being boiled in water for 5-10 minutes and drunk warm, whereas infusions consisted of boiling water being poured over the actual plant parts and left to steep. Baths consisted of plants parts being crushed into water and allowed to steep. The organic material was strained and the remaining water was used to pour over the body, unless it was done in a tub big enough for someone to soak in. In certain instances, plant parts, usually leaves, are crushed or heated and put directly onto the skin for abrasions, sore muscles, or pain. Additionally, plants are either eaten raw or used in cooking as medicine.

3.4a Physical Ailments

In analyzing my data, I differentiated the uses for each plant. In some cases the same plant had multiple uses. The entire plant was either used to treat different conditions or different parts of the plant were used to treat different ailments. In total, there were sixty-two different physical ailments noted by the informants. Furthermore, I grouped the

citations according to condition in order to deduce the salient conditions and species. Again, this salience can suggest cultural importance and significance(Quinlan et al. 2002).

3.4b Nourishment

For the analysis of this data I took all of the species and uses that were associated with "nourishment" and created a spreadsheet. The terms were based on the responses from the interviews. The responses varied for what plants were used for. For example someone might say that *Mangifera sp.* are good for food while another would recommended eating the young leaves in a salad. For this research it is important to understand that in both instances this particular plant is being used as food. In generalizing, I grouped both of these under the general term of "food." Other responses that were grouped under "food" consisted of: "complete food, baby food, natural fat, good cholesterol, provision, or a vegetable." The other terms used under the nourishment category consisted of: seasoning/ flavor, fiber, iron, calcium, tonic, and vitamin. When it came to the generality of "seasoning and flavor" I looked for key words that would associate these plants as an addition to the actual meal or beverage rather than what was needed to create the actual food or drink. Finally the more vitamin-like terms were determined by the responses of my informants. This meant that the respondents associated them with having some type of vitamin or mineral content that was good for the body.

3.4c Skin Conditions

For the analysis of skin conditions I grouped similar uses of plants to determine more general categories. Once again there were a variety of ailments mentioned by the interviewees. Some of these consisted of: "use for sore, to heal cuts, relieve arthritis pain,

as shampoo, to bathe in and wash the body, to seal cuts, and as a hair tonic." In order to make the data both inclusive and cohesive, I grouped together plants based on their uses. For instance, one informant said that *Aloe sp*. was used as a tonic for the hair, whereas another informant might have said that *Gliricidia sepium* is used as a shampoo; therefore these are both grouped under the general term "shampoo." The plants placed within the 'cleansing' category were either used to wash or bathe the body. The informants provided three different kind of rashes: eczema, prickles, and rash. Eczema was noted as the skin being dry and bumpy, but prickles are considered something different. Prickles is a common problem known in Dominica and discussed in greater detail in *From the Bush* (Quinlan 2004); however for clarification here it has to do with rash bumps that are associated with having excess heat in the body. For my research I have grouped all of these under the term "rash." In differentiating between plants used as an 'antibiotic ointment' and those used for 'abrasions' I separated the ones specifically told to me to be used for cuts or open wounds to the skin versus those used to treat sores or in combination with an ointment. The informants used these species to alleviate arthritis pain, for sprains, sore muscles, broken bones, to stop bleeding, and as bug spray.

Chapter 4

Results

4.1 General Sum of Findings

In total there were two hundred and thirty-two plants mentioned by the informants (Table 1). I utilized the supplemental information regarding the use of plants, where they were located, and ailments they treated to assess the salience of species and ailments within the general Dominican population. These findings highlight species and ailments that were acknowledged and used by more than one informant, which provides a way to decipher salience.

Table 1: Summary of Botanical Plant Data

Number of Informants	15
Number of Plants Noted by all Informants	232
Number of Different Species	128
Number of Species Identified to Genus	95
Number of Unidentified Species	33

In comparing species known across informants, thirteen species were acknowledged by more than four respondents (Chart 1). In total, there were forty-eight species (Table 2) recognized more than once, however chart 1 represents the portion where more than a quarter or just over twenty-five percent of the informants agree that these particular plants have medicinal use.

Chart 1: Salient Species Acknowledged Across Informants

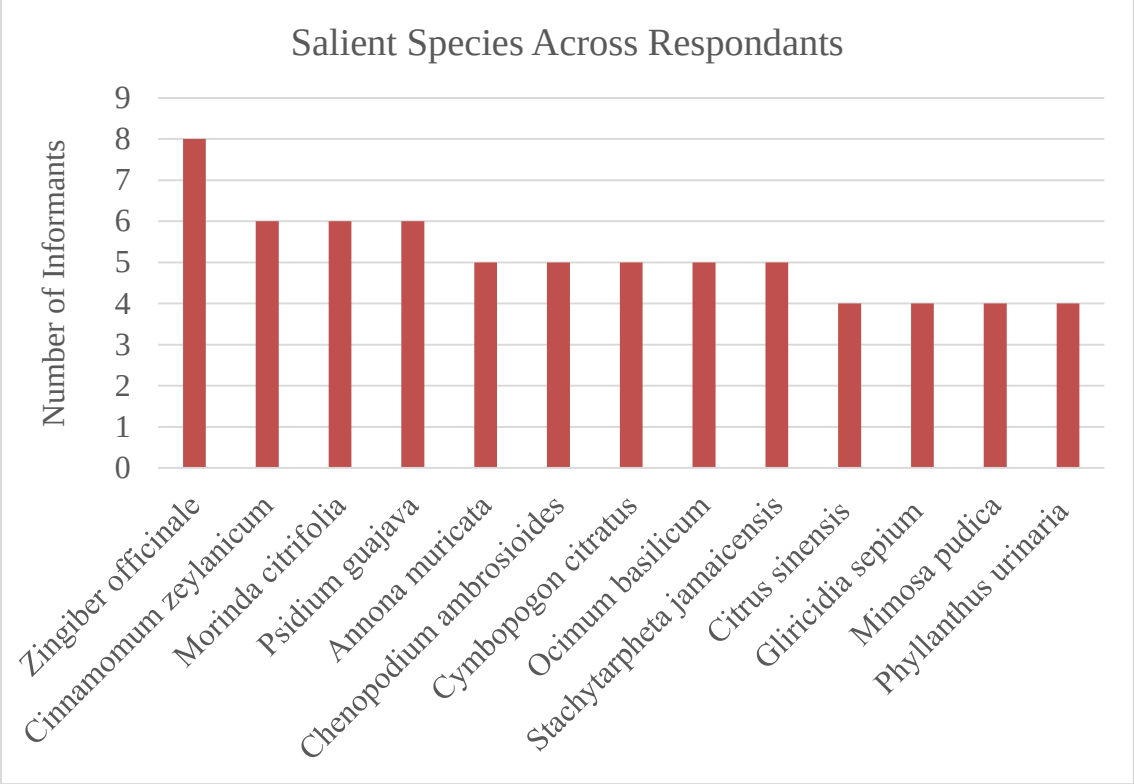


Table 2: Species Recognized by More than One Respondent

Scientific Name	Common Name	Origin of Species	Number of Informants
Amaranthus dubius Mart. ex Thell.	Wild Spinach	Neotropical	2
Annona muricata L.	Soursop	Neotropical	5
Aristolochia trilobata L.	Tref	Neotropical	2
Artocarpus altilis (Parkinson) Fosberg	Bread nuts	Asia	2
Cannabis sativa L.	Marijuana	Asia	2
Capsicum annuum L.	Bird Pepper/ Cayenne	Neotropical	2
Carica papaya L.	Papaya	Neotropical	3
Cassia sp. L.	Senna	Neotropical	2
Chaptalia nutans (L.) Pol.	Dandelion	Neotropical	2
Chenopodium ambrosioides L.	Semikotwa	Neotropical	5
Cinnamomum zeylanicum Blume	Cinnamon	India	6
Citrus aurantifolia (Christm.) Swingle	Lime	Asia	2
Citrus sinesis (L.) Osbeck	Sweet Orange	Asia	4
Commelina diffusa Burm	Fat grass	Asia	2
Curcuma longa L.	Tumeric	Asia	2
Cymbopogon citratus (DC.) Stapf	Lemongrass	India	5
Eryngium foetidum L.	Shadobeni	Neotropical	2
Fucus Versiculosus L.	Kelp	All Oceans	2
Gliricidia sepium Kunth ex Steud.	Glory Cedar	Neotropical	4
Hibiscus sinensis Mill.	Hibiscus	Neotropical	3

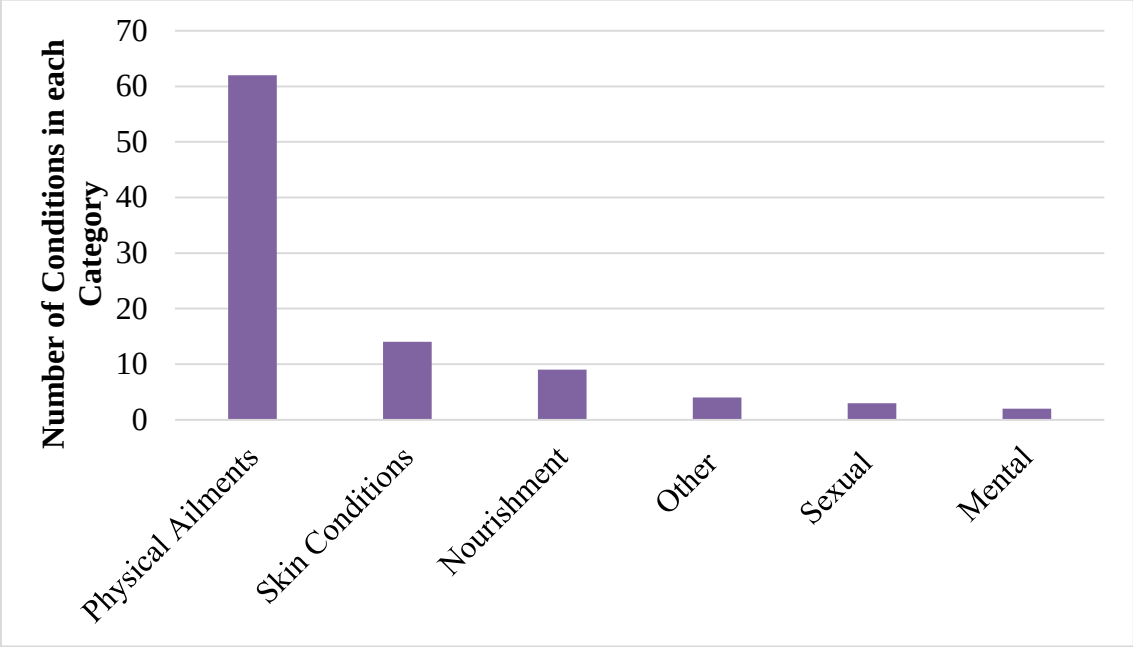
Kalanchoe pinnata (Lam.) Pers.	Leaf of Life	Africa	3
Laportea aestuans Chew.	Stinging Nettle	Neotropical	3
Mangifera indica L.	Mango	Asia	3
Mentha piperata L.	Peppermint	Europe	2
Mentha pulegium L.	Red Peppermint	Mediterranean	2
Mimosa pudica L.	Sensitive Plant	Neotropical	4
Morinda citrifolia L.	Noni	India	6
Momordica charantia L.	Ceresse/ Koukouli	Asia	2
Musa sp. L.	Banana leaf	Asia	3
Myristica fragrans Houtt.	Nutmeg	Asia	3
Ocimum basilicum L.	Basil	Africa/ Asia	5
Oldenlandia corymbosa L.	Langue Poule	Africa/ India	2
Opuntia spp.Mill.	Prickly pear	Neotropical	2
Passiflora laurifolia L.	Passion Fruit	Neotropical	2
Persea americana Mill.	Avocado	Neotropical	3
Phyllanthus urinaria L.	Gwen Abefe	Asia	4
Pimenta racemosa (Mill.) J.W. Moore	Bay	Neotropical	2
Plectranthus amboinicus (Lour.) Spreng.	Large oregano leaf	Africa	2
Pluchea symphytifolia (Mill.) Gillis	Tabac Zombie'	Neotropical	3
Psidium guajava L.	Guava	Neotropical	6
Rosmarinus officinalis L.	Rosemary	Mediterranean	3
Sechium edule (Jacq.) Sw.	Chou	Neotropical	2
Spondias dulcis Parkinson	Sugar/ Star Apple	Asia	2

Stachytarpheta jamaicensis (L.) Vahl	Blue vervain	Neotropical	5
Terminalia catappa L.	Indian Almond	Africa	2
Theobroma cacao L.	Cacao	Neotropical	2
Zingiber officinale Roscoe	Ginger	Asia	8

Each species was categorized according to ailment treated. Due to the large range of ailments the species were organized under six general categories: physical ailments, nourishment, skin conditions, sexual condition, material, and mental conditions. Physical ailments were indicative of internal illnesses associated with problems surrounding the immune system (i.e. colds, flu, internal body/ blood cleansers, diabetes, immune boosters, etc.). Species within the nourishment category were used as nutritional supplements (i.e. fiber, vitamins, or minerals that were received after eating the item raw or cooked). Plants within the skin conditions category were used to treat external ailments and other conditions—skin abrasion, broken bones, or as shampoo. Within the last three categories (sexual conditions, other, and mental conditions) species were acknowledged by the informants to heal conditions within these categories. However, they represent an insignificant portion of the data set to further elaborate on. To better understand and present the findings, specific conditions within each category were evaluated to illustrate importance and salience of species.

As we can see from chart 2, medicinal plants were most noted to treat physical ailments. The range of illnesses treated by medicinal plants was large, however those that are of importance to notice are the salient ailments. Notifying specific ailments can allow us to better understand the ailments that affect Dominicans and how it is that they work to treat themselves.

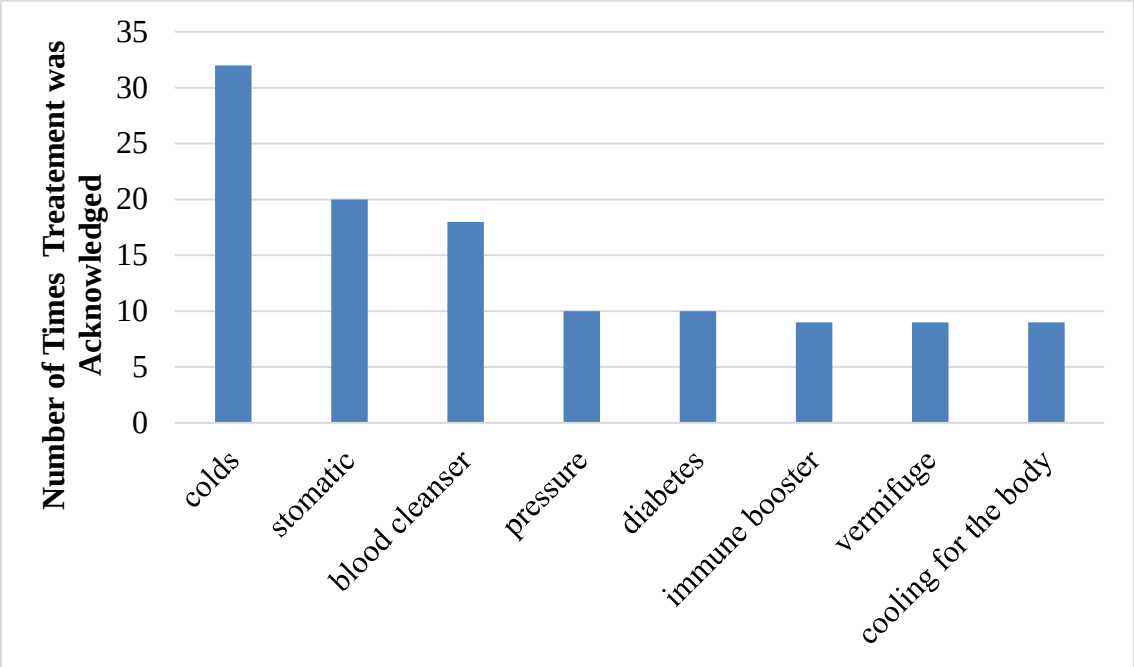
Chart 2: Number of Conditions per Category (Physical Ailments: internal body and immune system, Skin Conditions: outer physical body, Nourishment: energy builder and vitamin, Other: material, fodder, and fertilizer Sexual: aphrodisiac, reproduction, and STD Mental: depression and anxiety)



4.2 Physical Ailments

The range of illnesses treated by medicinal plants was large, however the salient ailments are the most important. Through notifying specific ailments we can better understand what ailments affect Dominicans and the plants that are used to treat them. In total, there were sixty-two different physical ailments noted, but the significant ones were those mentioned numerous times (Chart 3).

Chart 3: Ailments Treated by the Most Medicinal Plants



Colds, the most salient condition, refers to a variety of general symptoms such as stuffy nose, coughs, weakness in the body, and fever to name a few. This ailment had the most notations of different species (twenty-three different species noted to be used for treatment out of thirty-two) for treatment. However, of these species, both *Cymbopogon citrarus* (lemongrass) and *Ocimum basilicum* (basil) were the most salient across respondents. *C. citrarus* was noted by Dominicans living in the Roseau valley as well as in Soufrière, whereas *O. basilicum* was noted by Dominicans living in Portsmouth and Soufrière as being good for colds.

Of the plants that are listed to treat stomach problems *Mentha piperata* (peppermint) and *Zingerber officinale* (ginger) were noted more than once. *Mentha piperata* was acknowledged as one of the best remedies to treat stomach problems and is also used in the treatment of various other conditions, however the lack of utilization does

not show cultural relevance. On the other hand, *Z. officinale,* is both salient across respondents and conditions. *Z. officinale's* use as a cold remedy was acknowledged by three respondents. More broadly, it was used by some for an overall tonic, as well indicated to be used for specific reasons such as excessive stomach gas. These uses indicate its importance and versatility in Dominican culture.

The informants suggested specific plants to be used as blood cleansers, however *Glirisidia sepium* (glory cedar) was the only plant that was noted by more than one respondent for this particular purpose. The results show that colds, stomach problems, and blood cleansers have possible herbal treatments. However due to the large number of species and lack of repetition of species, it becomes difficult to ascertain the importance of particular species. In other research in Dominica an uneven distribution of medicinal plant knowledge pertaining to particular species of plant and use has been noted (Quinlan and Quinlan 2007).

These twelve species were noted by respondents to be used in healing the largest variety of ailments (Table 3). The species, as well as the conditions illustrate salience across the informants. The species shown treat the most noted conditions that were acknowledged. *Carica papaya* (papaya) was the only species that was noted by more than one informant to treat pressure. Pressure, to Dominicans, is a response to excess heat in the body often caused by diet, digestion, or stress (Quinlan and Quinlan 2007). Regarding diabetes, there are three species that were important: *Morinda citrifolia* (noni), *Z. officinale* (ginger), and *Cinnamomum zeylanicum* (cinnamon). Five different people acknowledged *Chenopodium ambroisoides* (wormseed) as a vermifuge. More than fifty percent of the plants used to treat fever, eyes, and that are used for tonics come from the list of the most

salient species known by respondents. However, the number of salient species used to treat cooling in the body (associated with humoral medicine, when there is an increase in body temperature cooling herbs are used to counteract the excessive heat), energy, cancer, headache, and washout is too insignificant, yet it shows that some of the salient species are represented throughout the salient conditions. *M. citrifolia*, *Z. officinale*, and *Phyllanthus urinaria* (qwen abefe) were acknowledged for their cure-all abilities. This shows that there is salience for conditions and species.

Table 3: Twelve Salient Species across Respondents and Physical Ailments ("Cooling for the Body": cools down the body temperature, "Doctor of Signatures": general use for treatment of any ailment)

	Morinda citrifolia	*Zingiber officinale*	*Phlyllanthus urinaria*	*Psidium guajava*	*Cinnamomum zeylanicum*	*Cymbopogon citrarus*	*Glirisidium sepium*	*Annona muricata*	*Ocimum basilicum*	*Stachytarpheta jamaicensis*	*Mimosa pudica*	*Citrus sinensis*
Body Cleanser	x	x		x			x	x		x	x	x
Stomatic		x	x	x	x	x					x	
Colds		x		x	x	x			x			x
Tonic	x	x		x	x							
Cancer	x		x					x				
Fever			x	x		x						
Doctor of Signatures	x	x	x									
Cooling for the Body		x					x			x		
Diabetes	x		x		x							
Blood Pressure	x											x
Eyes	x						x					
Headache		x	x									
Loose bowel		x		x								

4.3 Nourishment

Of the plants that were noted to be used for nourishment needs, eleven of these species had more than one quality (Table 4). *Artocarpus altilis* (breadfruit) is eaten as a food in order to keep the body full and as natural bread. *Capsicum sp.* (pepper) comes in a variety of forms in Dominica, but noted for its nutritional value as well as its ability to flavor food. *Carica papaya* (papaya) can be eaten, when it is ripe, as a fruit that is good for the stomach, or cooked, when it is still green, as a provision, starchy vegetable. *Cinnamomum zeylanicum* (cinnamon) is used to flavor both food and beer, but its use as a cancer fighter is a main reason that people use it. *Colocasia esculenta* (dasheen) leaves are used in making callalou, a well-known Dominican and broader Caribbean soup dish that is linked to both slavery and African traditions. *Dioscorea sp.* (yam) is used as a provision and as a good baby food. *Fucus Versiculosus* (algae) was noted by informants in Portsmouth and Roseau to be eaten as food because it is high in calcium and iron. *Mangifera sp.* (mango) come in numerous varieties in Dominica, each having a different sweetness. These fruits are mostly eaten raw as a fiber source and for the vitamins they contain. *Ocimum basilicum* (basil) is eaten raw or in food for the vitamin content and to increase one's libido. *Persea americana* (avocado) is believed to be good for the body in the fact that it provides natural cholesterol and fat. *Psidium guajava* (guava) is eaten for its fiber and iron content. The multiple uses of these plants demonstrate that there are nutritional needs fulfilled after ingesting these plants.

Table 4: Top Eleven Species Used for a Variety of Nutritional Needs

	Iron	Calcium	Food	Fruit	Tubers	Fiber	Seasoning	Provision	Vitamin
Fucus versiculosus	x	x	x						
Mangifera indica			x	x		x			
Psidium guajava			x	x		x			
Artocarpus altilis			x	x					
Capsicum annuum							x		
Carica papaya							x	x	
Cinnamomum zeylanicum							x		
Colocasia esculenta			x		x			x	x
Dioscorea sp.			x		x			x	
Ocimum basilicum			x				x		x
Persea americana			x	x					

4.4 Skin Conditions

Various plants are used to both clean the body and to treat skin problems (Table 5). The most common parts of the plant used are the leaves and stem, which are often prepared to place on the skin, rather than to be taken internally. The majority of the time, the plant material was crushed into water, strained, and then used to wash the body. If small enough, someone could get into a tub and bathe, otherwise it was just poured over the body. The plants species that produce oil are used to rub on sore muscles, for arthritis, rashes, and on the scalp to cleanse the hair. Skin abrasions and open wounds are most often healed using a poultice, which is crushed up plant material that is directly placed on the affected area

and allowed to heal. This information shows that there are a variety of possible herbal treatments to combat skin conditions.

Table 5: Plants and Parts Used to Treat Skin Conditions

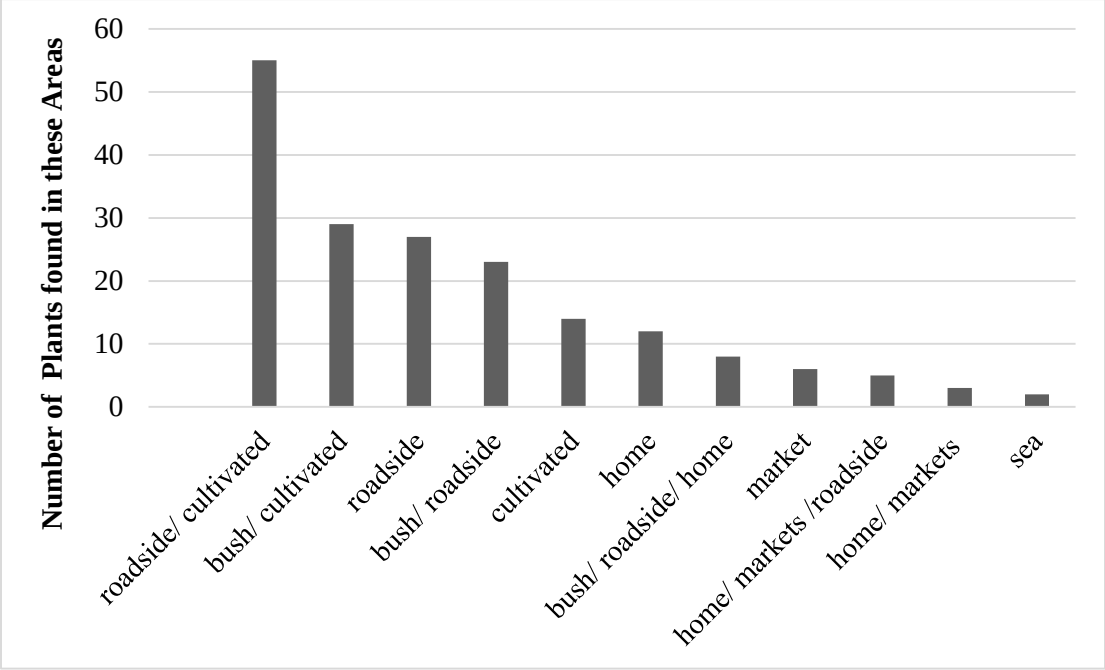
Scientific Name	**Common names**	**Plant Part Used**	**Uses**	**Preparation**
Aloe vera	Aloe	stem	shampoo	wash
Capsicum annuum	Bird Pepper	fruit	antibiotic ointment	poultice
Carica papaya	Papaya	fruit	abrasions	poultice
Cassia occidentales	Café mocha	leaf	arthritis	tea
Glirisidia sepium	Glory Cedar	leaf	shampoo/ body cleanser	wash
Hibiscus sp.	Hibiscus	leaf	shampoo/ body cleanser	wash/ poultice
Laportea aestuans	Zotee	leaf	rash	wash
Morinda citrofolia	Noni	leaf	abrasions	poultice
Mormordica charantia	Cocouli', Pomme Coolee	leaf	cleanser	wash
Musa sp.	Banana leaf	leaf/ fruit	bleeding/ antibiotic ointment	poultice
Opuntia sp.	Cactus	stem	cleanser/ rash	poultice
Pandanus pacificus	Screw pine	stem	sprain	poultice
Pimenta racemosa	Bay	leaf	arthritis/ rash	oil
Pogostemon heyneanus	Patchouli	leaf	deodorant	oil
Ricinus communis	Castor bean	seed	shampoo/ muscles	oil
Rosmarinus officinales	Rosemary	leaf	shampoo	oil
Rubus rosifolius	Wild raspberry	leaf	rash	wash
Scoparia dulcis	Sweet broom	leaf	shampoo/ sprains	wash/ poultice
Stachytarpheta jamaicensis	Vervain	leaf	cleanser	tea

4.5 Distribution of Species

In analyzing where the majority of species were found, I discovered that many of these plants are found along the roadside and in cultivated areas (Chart 4). While some

of the individuals with whom I spoke did provide other responses such the market or in their home gardens, it is evident that Dominicans do have access to many of these species. The table below depicts these results.

Chart 4: Areas Noted for Gathering Medicinal Plants



Chapter 5

Discussion

In Dominica, a human-environment relationship has developed both out of necessity and through one's connection to place. The human-environment relationship reveals itself through the interaction that Dominicans have with plants—the agricultural practice of small scale farming and widespread use of medicinal plants. Furthermore, it is the understanding that Dominicans have regarding the tropical environment in which they live—how to exploit natural resources, ways to react during natural disturbances (hurricanes, heavy rainfall, flash floods, and landslides), and the utilization of the aquatic resources to promote health and healing. Through highlighting important medicinal species; we can begin to explore Dominican culture.

Dominica's landscape—cultural and physical—is a complex web of history that reveals itself in the human-environment relationships found throughout the island. These histories incorporate the cultures of various groups of people who came to settle and mix on the island, how people came to adapt to Dominica's environment, and the transformation, exchange, and diffusion of knowledge within the society. The fusion of these histories has led to the abundance of plants used for food and medicine.

5.1 Cultural Associations in Agricultural Practices

Historically, botanical and ecological knowledge has been instrumental for survival. Provision grounds and subsistence agriculture have been an essential aspect of the broader Caribbean region both during and after slavery (Carney 2009, Pulsipher and

Berleant-Schiller 1986). It is within these grounds that cultures throughout the Caribbean came to adapt to the environment in which they live.

> Estate slaves commonly grew their own subsistence on plantation uplands, lands judged unsuitable for the major plantation crops. It was on such lands that the slaves acquired or perfected their horticultural skills, developed their own standardized agricultural practices, learned the characteristics of Caribbean soils, mastered the cultivation of new crops, and otherwise prepared themselves for their reconstitution as peasantries. (Mintz 2010, 15)

In Dominica, the amount of space available for food production and farming is limited due to the steep mountains. This has caused their food production and livelihood to be highly localized; resulting in a close relationship with the environment (Peteru et al. 2010). The knowledge of how to garden this environment—clearing land, dealing with excessive rainfall, wind conditions—reflects the ability of Dominicans to adapt to environmental conditions.

Dominica's cultivation systems reflect a blending of cultures through the use of various types of gardens, as well as within the actual plant species used. Pulsipher (1994) acknowledged three types of slave gardens within the Caribbean landscapes—common grounds, ravine and mountain grounds, as well as house yard gardens. Each one of these grounds reflects various cultural histories that have impacted their production and use. Common grounds are associated with the cultivation of flat areas of land containing only root and tuber crops (*Xanthosoma sp*., *Manihot esculenta,* or *Discorea sp.).* The limited crop diversity and planting on clear cut land are associated with European agricultural practices (Pulsipher 1994).

Ravine and mountain grounds reflect an African cultural heritage due to the intercropping of plants, the diversity within these plots, and the use of land on upland slopes

(Pulsipher 1994). These types of grounds were encountered at higher elevations near Freshwater Lake and Middleham Falls, located in the Roseau Valley in Dominica. In particular areas, large trees with various shrubs and herbaceous plants growing beneath were observed growing in fields on steep slopes. However, many of these fields were not close to houses which made it difficult to speak with people regarding what particular plants were grown.

House-yard gardens in the Caribbean are characterized by the inclusion of fruit trees, (often *Cocus nucifera*, *Musa sp*., Carica *papaya*, *Terminalia catappa*, or *Mangifera indica*) herbaceous plants, and medicinal plants. These characteristics were commonly observed walking around the streets throughout Dominica. All of the houses encountered in this research, including the place where I stayed, had gardens around their homes which included fruits trees and medicinal plants. *Mangifera indica* (mango), *Cocus nucifera* (coconut), and *Carica papaya* (papaya) were easily accessible along the roads and in people's yards.

Gardening within the Antilles extends beyond just a mixing of cultures, and reflects the actual creolization process (Pulsipher and Berleant-Schmiller 1986, Pulsipher 1994). The use of various species from all over the world signifies the mixing of cultural traditions and knowledge which created what is known today. The dietary preferences of Dominicans reflect both African and Amerindian heritage with the dietary staples including: tubers, roots, legumes, and starchy vegetables. The continued use and importance of various root crops as a food source illustrate the blending of knowledge and retention of traditions within Dominican culture.

The tropical environments of the Caribbean were similar enough to those in Africa that many of the traditional food plants could be grown (Carney and Rosomoff 2009). In almost every area visited on the island, the root and tuber crops encountered were: *Xanthosoma sagittifolium* (tannia), *Dioscorea* (yams), *Colocasia esculenta* (dasheen), and *Manihot esculenta* (cassava). These crops in particular come from both sides of the Atlantic indicating that there was an exchange of knowledge about how to grow, prepare, and consume these foods.

Bananas and plantains are another highly consumed food in Dominica. The genus *Musa*, particularly the plantain, is known to originate in Asia. However it was widely eaten in equatorial Africa during the Bantu expansion, prior to the Atlantic slave trade (Carney and Rosomoff 2009). Thus, Africans would have arrived in the New World with knowledge regarding its importance and use. Other plants that were important as food and medicine in Dominica that originated from Asia were *Cajunus cajan* (pigeon peas), *Citrus sinensis* (orange), and *Zingiber officinale* (ginger). Those borrowed from Native Americans were *Capsicum sp.* (pepper), *Ananas comosus (*pineapple), and *Sechium edule* (christophene). European plants eaten in Dominica are *Brassica oleracea* (cabbage), *Daucus carota* (carrot), *Allium cepa* (onion), *Thymus vulgaris* (thyme), *Rosmarinus officinalis* (rosemary).

Dominica's physical topography has impacted the use of land throughout its history. The people have proven to be adaptable and flexible within this environment. Food is critical for survival in any society and in Dominica most of the food is produced and consumed locally. This means that the traditions associated with growing, cooking, and consuming foods were created and have been passed down on the island. Further

examination of what these species are and, in particular, where they are grown, reflects the cultural mixing which is also represented in the use of medicinal plants on the island.

5.2 Disturbed Flora in the Herbal Pharmacopeia on the Island

The herbal pharmacopeia found on the western coast of Dominica is predominantly composed up of pan-tropical weedy species. Historically, as plants have been exchanged, many non-native species have become more or less naturalized within new environments. Pfeiffer & Voeks (2008, 286) found that out of the "biologically invasive plants that have been present for more than three generations (at least 100 years), many have become culturally enriching through their incorporation into local cuisine, pharmacopeias and rituals." In Dominica, as well as the broader Caribbean, introduced species can be found within disturbed landscapes including: provision grounds, door yard gardens, roadsides, and trails (McClure 1982, Mitchell 2011, Vandebroek 2010, Vandebroek et al. 2009, Voeks 2009, 2013, Wesley 1976). The use of disturbed flora in medicinal pharmacopeias on the island illustrates the botanical and cultural importance of these anthropogenic landscapes.

In thinking about cultural development, retention of traditions—particularly associated with plant use and medicine—we have to think about what makes these plants known. The human-environment relationships in Dominica are a result of how various cultures adapted to living on the island. The origin of plants and people, as well as when and how introduction occurred, is critical for understanding this relationship. Botanical knowledge already known or acquired while in Dominica aided in this adaptation. Voeks (2013) argues that the introduction of plant species on both sides of the Atlantic occurred for an extensive period of time, prior to the largest introduction to African slaves. Thus, as

the largest inflow of Africans arrived in the New World, many of the disturbed species would have already been established on both sides of the Atlantic; creating a space that would foster traditional beliefs and uses.

Within this research it was difficult to decipher particular traditional beliefs, yet convenient to see that species from Africa (i.e. *Ricinus communis* – castor bean) continue to be used. The floristic similarities of species found in Dominica, as well as acknowledged in other scholarship in Brazil (Voeks 2009) and Ghana and Suriname (Van Andel et al. 2012), to those found in Africa provided an opportunity for herbal pharmacopeias to be reproduced and reinvented with the plants available in these environments.

The Dominican pharmacopeia does not exclusively entail the use of African species, but utilizes species from all over the world. Many of these species are considered "weeds," which are categorized as herbaceous plants that grow in poor conditions, disturbed landscapes and reproduce rapidly (Stepp 2001, Voeks 2013). There are two important things to consider when thinking about weeds as medicinal plants. First, there are biological and ecological factors that protect and promote plant growth (McCarthy 2001, Stepp and Moerman 2001). Ecologically, many of these plants are allelopathic, meaning they contain compounds that inhibit the growth of other species near them. In addition, the chemical compounds can be used to attract pollinators or as a defense against microbes, insects, or herbivores. It is these same compounds—tannins, lignins, alkaloids, cardiac glycosides, terpenoids—that provide medicinal benefits through reactions that occur within the human body. Second, weedy species are both abundant and accessible. In order for plants to be known and applied as medicines, a culture needs to have access to large quantities for continued use and experimentation. It is important to acknowledge that

this is not always the case and rare plants can be used. However, when people are ill, plants within close proximity are more likely to be utilized.

In Dominica, anthropogenic landscapes have less diversity than the surrounding forests and function into the everyday lives of Dominicans. While visiting some of the national parks and walking the trails in Dominica, the diversity of species was vast, making it difficult to discern species and use. The common and accessible areas were often along roadsides or in people's gardens due to the steep slopes that inhibited access to interior forests. In addition, traveling to the forest or other areas of the island can be difficult or inconvenient causing more people to use plants that are easy to obtain.

Furthermore, accessibility to plants is something that is acknowledged within other Caribbean research. In comparing the species known and utilized with this research with other Caribbean research clear similarities of salient species are revealed across the region (Table 6). Here we can see that fifty-nine species included in this research are also referenced within the broader Caribbean research that focuses on medicinal plants. This shows that these plants and this disturbed space is an important part of Caribbean culture and society. However, the unique factor in Dominica in relation to health and healing is broader than plants and encompasses the knowledge and utilization of other healing resources as well.

Table 6: Comparison of Plants in this Research with Broader Caribbean Research

	Meyer 2013/14 Thesis Research	**Halberstein (2005) Caribbean**	**Mahabir and Gulliford (1997) Trinidad**	**Mitchell and Ahmad (2006) Caribbean**	**Van Andel et al. (2012) Caribbean**	**Vandebroek (2010) Dominican Republic**
Aloe vera	x	x	x	x	x	x
Annona muricata	x		x	x	x	x
Aristolochia trilobata	x		x			
Atrocarpus altilis	x	x		x		
Cannabis indica	x			x	x	
Capsicum annum	x			x	x	x
Carica papaya	x	x	x	x	x	
Cassia occidentalis	x			x	x	x
Catharanthus roseus	x	x	x	x		
Chaptalia nutans	x			x		
Chenopodium ambrosioides	x			x		x
Cinnamomum zeylanicum	x			x		
Citrus aurantifolia	x	x	x	x		x
Citrus aurantium	x	x		x	x	x
Citrus sinensis	x		x		x	
Cocos nucifera	x			x	x	x
Colocasia esculenta	x			x		
Commelina diffusa	x			x		
Crescentia cujete	x		x	x		x
Cymbopogon citratus	x		x	x	x	x
Dioscorea polygonoides	x			x	x	
Eryngium foetidum	x	x	x	x		
Gliricidia sepium	x			x		
Hibiscus elatus	x			x		
Hibiscus sabdariffa	x			x		
Hibiscus sinensis	x		x	x		
Kalanchoe (Bryophyllum) pinnatum	x	x	x	x		

Lantana camara	x		x	x	x	
Laportea aestuans	x				x	
Leonotis nepetifolia	x		x			
Mammea americana	x				x	
Mangifera indica	x	x		x	x	x
Manihot esculenta	x			x	x	
Mentha sp	x				x	x
Mimosa pudica	x		x	x	x	
Momordica charantia	x	x	x	x		x
Morinda citrifolia	x				x	x
Moringa oleifera	x			x	x	x
Musa spp.	x			x	x	
Myristica fragrans	x			x	x	x
Nasturtium officinale	x			x		x
Ocimum basilicum	x		x	x	x	x
Opuntia cochenillifera	x			x		
Passiflora foetida	x		x		x	x
Persia americana	x		x	x	x	x
Phyllanthus amarus	x		x	x	x	
Pimenta racemosa	x		x		x	
Plantago major	x			x	x	x
Plectranthus amboinicus	x			x		x
Psidium guajava	x			x	x	x
Ricinus communis	x			x		x
Saccharum officinarum	x			x	x	x
Sechium edule	x			x		
Stachytarpheta jamaicensis	x		x	x	x	x
Symphytum officinale	x			x		
Terminalia cattapa	x			x	x	
Theobroma cacao	x				x	
Zingiber officanale	x		x	x	x	x

5.3 Dominican Use of Other Natural Resources

Dominica's mountainous terrain causes an abundance of runoff and plenty of fresh water. One informant told me that "it rains everyday somewhere on the island." Of the roughly three hundred and sixty-five rivers and streams located on the island, many provide fresh drinking water or places to bathe. Many Dominicans, especially those who reside near the coast, take "sea baths" on a regular basis. The sea provides an abundance of food, but it is also used to heal the body. Its saline properties are used to cleanse the body, especially for skin abrasions, and I observed rocks being used to abrade dead skin.

Due to the large amount of volcanic activity on the island, there are many hotsprings. Historically and presently, the hot springs found throughout the island are known and used to heal many disorders (Atwood 1791) (Figure 12). When being shown hotsprings outside of Portsmouth, I was informed of that these springs had magical healing powers. In particular, this spring did not have any smell or taste of sulfur. It was also explained that Elizabeth "Pampo" Israel or Ma Pampo, who reached the age of 127 years old, used these springs on a daily basis which are believed to have fostered the longevity of her life. The hotsprings in Soufrière were accessible and used by many people. During a conversation walking from there, a Dominican explained that after injuring his shoulder "he would travel there once a week to soak, so his shoulder could heal."

Figure 12: Picture of hot springs and cold springs that meet at Trafalgar Falls. Photographer: Maureen Meyer

In addition, mineral springs throughout the island are believed to have medicinal properties. One couple informed me that the cold stream flowing next to the hot springs in Soufrière had medicinal properties. They said that it was "flowing up from below the ground, was extremely cold, and a good tonic (Figure 13)." Interested I decided to taste it. Although I am unaware of the chemical constituents, I did notice that it had a strong acidic taste. Further research could be conducted to test this stream along with other ones to determine the chemical composition and possible benefits.

Figure 13: Picture of the healing stream in Soufrière. Photographer: Maureen Meyer

Health includes other activities such as exercise and relaxing. The various national parks, hiking trails, and beaches are utilized for exercise. The hotsprings were noted by individuals "to aid in healing, but also used to relax." On Sundays, everyone rested in Dominica. There were few buses that traveled throughout the country, many of the stores—at least in Loubiere—were not open and people went to church, ate food, and relaxed. In the five weeks that we were there, we never traveled on Sunday. It became a beach day for us, as well as others in Loubiere. There was a family who lived right next to the beach whom we would often swim with them, but on Sunday others came–some families and some individuals. Everyone came to enjoy the sea, whether they could swim or not. We spent hours there with others—going in and out of the water, waiting and watching as rain showers came, relaxing the whole time.

Promoting health is also about staying safe within the environment and ecosystem in which they live. Dominica's location in tropics makes them susceptible to a variety of natural disturbances that can be unsafe—hurricanes, flash floods, heavy rainfall, and landslides. Knowing how to read and react to cues within the environment reflects the relationship that Dominicans have with the environment that surrounds them. Those living close to the coast were able to tell when the sea was too rough to go in by observing the waves and were quick to inform us if it was unsafe.

Hurricanes can hit Dominica any year. At the end of our stay in Dominica, a hurricane was thought to be approaching the island and I observed Dominicans taking proactive measures (pruning large trees, clearing the yards of large objects, and the need to bottle extra water) to decrease the chance of destruction. Additionally, heavy rains can cause flash floods and landslides. In one instance I was informed by a woman to put a rock upstream as a warning sign in case a flash flood was to occur while bathing or doing laundry in the river. What is important to understand and what I wish to highlight, is that this knowledge–regarding botanical and environmental resources used for health—is acquired from living in a space over time and through the transformative process of knowledge diffusion from generation to generation.

5.4 Plant Use in the Creation of Dominican Cultural Identity

The passing on of this knowledge is a cultural expression that can be tied to the creation of cultural identity. In Dominica, most informants I spoke with identified the length of time of knowing about plants as "Since I know myself". The knowledge is a part of who they are and what they identify with. The grammatical saying could of course just be the common phrase, but in the context of the question it related to time, knowledge, and

memory. Each of these concepts can be associated with identity. Knowledge is accrued overtime through experiences and it is the memories of these experiences that shape a person's identity.

In Dominica, not everyone I spoke with used all of the plants that they told me, but each person remembered how it was administered to them and continues to associate particular species with use. As reflected throughout this research, medicinal plants are something that Dominicans identify with and when one can identify with something that has social and personal meanings—the objects, ideas, traditions, actions–become part of one's identity (Garth 2013).

Identity is associated with belonging to a particular group, place and community (Premdas 2011). In order to conceptualize how identity could be constructed in Dominica, it is important again to examine and understand what makes up a culture.

> A country's culture is the dynamic reservoir of ways of thinking and doing accumulated over time, which has come to be agreed upon and transmitted across generations in a community. It includes the knowledge, experience, beliefs, values, customs, traditions, distinctive institutions and its way of making meaning in life. Culture then is the intrinsic factor which affects all aspects of human life and can be defined as the sum total of human, material and spiritual characteristics, features and values created, accumulated, strengthened and developed by a given nation in the course of its history. (National Cultural Policy of the Commonwealth of Dominica 2007, 9-10)

Dominica's culture is a creole culture, in which traditions, knowledge, and uses of botanical resources have blended in an environment that is unique and understood by Dominicans. Those who know Dominica, even if they have left, remember the space, and identify with Dominica's natural beauty and abundant plant life. Dominicans utilize resources of the environment everyday—making bush teas, bathing in the rivers, sea or hotsprings, eating coconuts, mangos, dasheens, christophenes or the various other food

resources. This knowledge is reflected in the continuation of these activities within the community indicating cultural significance.

Furthermore, the relationship that one has to the land or physical environment strikes deeply, fostering a strong connection to place. The connection and creation of identity to homeland is expressed through the images that resonate within individuals located on these islands, as well as within migrant communities.

> For most Caribbean persons, their images of a separate and unique identity are derived from their association with the shores and scenes, the special sights and sounds, of the Caribbean environment. It is the land which is the physical expression of home that has nurtured their identity and wherever they are found away from home the images of the Caribbean assume the shape of a metaphor for life itself. (Premdas 2011, 816)

The Caribbean has a history that does not lend itself to attachment either to structures or ancestors that have lived in one place for thousands of years. On the contrary, it is a history of bondage, enslavement, and fragments of traditions that have meshed together. However, the earth or terrain, and in this case the island of Dominica, has become the common feature—the stability—which unites the culture and is the basis for identity formation.

Moreover, the production of cultural identity is a continual process of change, yet the culture that one belongs to is the basis for one's identity (Hall 1995). The human-environment relationships that have developed throughout Dominica's history are a fundamental part of this culture. Medicinal plants and the beliefs associated with their use are part of the fabrication—socially, economically, politically—of the society. Erickson (2010) explains how medical systems "reflect the dominant themes of a society (5)." Dominicans are aware of the environment in which they live and know that they have the

resources to heal themselves. The herbalist in Roseau gave me good insight into the perception and understanding the consideration taken when healing with plants in Dominica.

> One needs to use the plants that are around them in order to heal, which is why much of western medicine does not always work. The plants here, in the Caribbean, are attuned to both the temperature and weather. It is also important to take each person individually because what would heal one person for a certain illness might not be the same that would heal another with the exact same illness. There are many factors that need to be acknowledged when healing people, for instance, where one might live, how the air flows through their house, where the filters and sewage areas are located in relation to their living space. All of these things could impact the types of plants that you would use on each individual. (Edison 6/20/2013)

Dominicans are relatively healthy people. They have access and employ the use of both botanical and natural resources to their advantage. Many are small scale farmers, where foods and herbs are grown for personal consumption or to be sold at the market, which inevitably perpetuates the connection to the land. In my interview with Rosie she explained that "most Dominicans know the medicinal benefits of various species and commonly drink *bush teas* every day." Drinking tea is the most common way in which medicinal plants are administered. The consistency and common knowledge associated with drinking teas illustrates the broader social significance of this action, relating it to identity formation.

The knowledge regarding medicinal plants is a part of history which has impacted the construction and establishment of a culture. Hall (1995) describes how cultural identity is not "produced out of thin air. It is produced out of those historical experiences, those cultural traditions, those lost and marginal languages; those marginalized experiences, those peoples and histories which remain unwritten." The historical experiences of the

Dominica culture are rooted in the human-environment relationships examined on the island.

The people whom I spoke with, did not identify themselves as African descendent or even creoles, but identified themselves as Dominicans. Although, the information I was given may have cultural attributes that can be associated with Carib, African, or European cultures, which are important aspects that, as scholars, we need to acknowledge, it is also important to acknowledge that those who I interviewed did not associate this knowledge with these various cultures, but acquired this knowledge from living and growing up in Dominica and within this culture. Thus, the human-environment relationships and the connection to place are fundamental aspects that can be associated with Dominican cultural identity.

The narratives of how people use plants, why they use them, and how this knowledge came to be are depictions of Dominican culture. Disturbed areas are important in Dominica as settlements, cultivated fields, and roads and at the same time they harbor a large amount of the medicinal flora examined in this research. The widespread knowledge and use illustrates cultural salience regarding species. The overall cultural importance of these plants as medicines and the continued use throughout Dominica's history signals to their establishment within Dominican culture.

5.5 Study Limitations

In conducting this research there were various limitations. First, five weeks is not sufficient time to leave with an in-depth understanding of the culture. With more time, relationships could have been built that would provide a stronger cultural perspective.

Dominica has a diverse flora and time constraints did not allow for in-depth investigation of species. I was unable to collect voucher specimens for any of the plants because many of my interviews were not located or conducted in such a way that collecting plants was feasible.

Since my study sites were not localized in one area, travel at times became a limitation. Transportation was available, but it was not always fast. The bus often made numerous stops and you always had to change buses in Roseau. The buses would not leave until it was full, and depending on where you were going in the island and the time of day, it could take anywhere from fifteen minutes to almost an hour to reach a relatively close destination. For instance, when we would go up to work with my informant in Portsmouth, the trip would take at least two to three hours, and the distance is only thirty-six kilometers or twenty-two miles.

The language posed a barrier as well. Although the official language is English, the majority of the population speak a French Patwa/ Kwéyòl which is extremely different than English and difficult to understand. I was able to communicate with all of my informants well, but when I was immersed within Dominican culture, walking down the roads in Roseau, it was hard to for me to grasp everything that was being said.

Appendix A

Semi-structured Interview Questions

1. What are five important medicinal plants/ bush medicines for you?
2. How do you acquire these plants?
3. What are the illnesses associated with the treatment of these plants?
4. How are these plants prepared?
5. How long have you been using medicinal plants?

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