ARTICLE
“El tabaco se ha mulato”: Globalizing Race, Viruses, and Scientific Observation in the Late Nineteenth Century

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Abstract

This article traces the earliest identified recorded descriptor for viral infection: the racialized Spanish expression “el tabaco se ha mulato” (“the tobacco has become mulatto”). The phrase appears in the late nineteenth century travel writing of French colonial scientist Jules Crevaux, written as he journeyed through post-Spanish Independence Colombia and observed the demise of the once-thriving tobacco industry. I theorize the literary translations and visualizations, or what I call “visual translations,” of the phrase across scientific and historical texts that cite Crevaux to track the refraction of racial, gender, and sexual discourses in virology. I argue that the phrase refers to the historically dispossessed Indigenous and Black subjects of the nascent Colombian republic and their resistance to subjection when forced to work the tobacco fields. The article historicizes virus discovery at the juncture between science, nation-building, global industrialization, and the disciplining of race and sex under the long shadow of Euro-American empire. Drawing upon Ed Cohen's concept of “viral paradox,” Nayan Shah's notion of “strangerhood,” and Mel Y. Chen's framework for thinking about “queer animacies,” I deconstruct the visual,
conceptual, and etymological roots of the phrase “el tabaco se ha mulato” to argue that the expression renders the virus as both “queer” and “strange” to the nation. The virus signifies the mulato subject as a stubborn challenge to racial hierarchies and to the host-guest-parasite relation, both of which are foundational to the social organization of the nation and polis. This signification insistently refuses the human/non-human binary that undergirds racial regimes and biological conceptions of life. In turn, I expand historical thinking about race, submit that pandemics result from global industrial resource extraction rather than merely poor hygiene, and offer a framework for “queer decolonizing.”

Introduction

On September 18, 1881, the French doctor and naval officer Jules Crevaux arrived by steamboat to the small agrarian town of Ambalema, Colombia. Known historically as La Ciudad del Tabaco (“the City of Tobacco”), the town formed a well-worn path among travelers and conquerors. During the sixteenth century Spanish conquest, Ambalema became recognized as a Pueblo de Indios (“Indian Village”) and gained notoriety for its cultivation of exquisite and highly valuable tobacco (“Ambalema,” n.d.). Upon his arrival to the town, Crevaux observed that Ambalema’s tobacco economy had entered into a state of decline.1 Drawing upon the local Spanish colloquialism used to describe tobacco crop failure, Crevaux (1883) commented: “el tabaco se ha mulato,” loosely translated as “the tobacco has become mulatto” (p. 401). This reference, “el tabaco se ha mulato” is recognized as the earliest recorded descriptor of the “tobacco mosaic” disease, which would become the first virus known to western modern science when Dutch botanist Martinus Beijerinck coined the term “virus” to describe its transmission in 1898.2 By the early twentieth century, the tobacco mosaic virus would inaugurate the field of virology. Yet the racial reference to the tobacco mosaic virus, “el tabaco se ha mulato,” would linger in the annals of science and continue to influence the conceptualization of viral existence.

During the nineteenth century postslavery and post-Spanish
Independence Latin America, the colonial term *mulato* continued to describe individuals of African-European and Indigenous-African descent (Rappaport, p. 61). Whereas, during the Spanish colonial period, individuals of “Spanish-Indian parentage” were referred to as *mestizo* and were encouraged to integrate into society, *mulatos* were held as separate and excluded from sociopolitical belonging in order to maintain the institution of slavery (Martínez, pp. 144-145). Thus, the appearance of the *mulato* reference in the postslavery nineteenth century historical and scientific record for virus discovery reveals how new modes for rationalizing the unseen sub-microscopic world were tied to colonial regimes of race and sex. Within this colonial logic, Africanness operates as a signifier for biological reproductive degradation. Furthermore, the *mulato* signification helped to drive the later scientific conceptualization of the virus as an unassimilable, strange, and threatening element existing among biological beings.

Historians of science and technology describe the “tobacco mosaic virus” (TMV) as an “experimental model” upon which knowledge about all viruses has been built (Creager, 2002). It was also the first virus to be scientifically imaged (in 1939), which, according to Nicolas Rasmussen (1997), provided empirical proof for the existence of all viruses. Yet little attention has been paid to how viral infection was *imagined* by the nineteenth-century scientists who could not see it. Why was the first virus discovered in tobacco? What does the reference in the scientific colonial archive to “el tabaco se ha mulato,” which preceded virus discovery, suggest about the roles race and sex played in perceiving viral existence? What do the adaptations of racial and sexual thinking in virus discovery say about this period of Euro-American Empire?

This article examines Crevaux’s record, and ongoing scholarly references to it, as an archive for modern viruses and their scientific observation. The archive reveals that the conceptualization of the tobacco virus was tied to the diffusion of scientific knowledge and national security through colonial ideologies of race and sexuality, even during the Latin American decolonization movements of the late nineteenth century. Since
TMV was visually imperceptible into the first few decades of the twentieth century, I argue that its scientific conceptualization relied on prevailing pathological discourses—namely colonial racial and sexual beliefs, and the mapping of the attendant visual cues onto the tobacco plant body. In effect, the scientific concepts developed around viruses were hitched onto concerns about proper racial and sexual reproduction generated during the earlier period of western empire. This article addresses how colonial racial and sexual ideas were extended through virus conceptualization, and considers the ways these ideas were shrouded in a biological science undergirded by nation-building and concerns about global security. The article proposes that although global security regimes maintain western imperialism and the geopolitical status quo, it is vital to consider how virus conceptualization sustains alternate social possibilities that imagine the end of empire.

To demonstrate how virus knowledge proceeds on a colonial racial and sexual foundation, I analyze iterations of “el tabaco se ha mulato” in scientific and historical texts written between the late nineteenth century and the contemporary era. Rather than treat viruses anachronistically as sheer biomedical fact, I show how meaning about viruses has accrued over time through constant literary translation and visualization of the phrase “el tabaco se ha mulato” in scholarship. These accretions in meaning have formed a palimpsest such that the underwriting of race and sex in viral logic appear faint, only to be quickly covered over by scientific rationalization. To read the scriptio inferior of the modern virus archive, I use the methods of scientific observation offered in colonial travel writing to turn the gaze back onto the observer. Commencing with Crevaux’s text, I retool the methods for literary translation and visualization, or visual translation, performed in colonial scientific writing. Examining the visual translations of “el tabaco se ha mulato” as it moves across the archive reveals contradictions in scientific conceptualizations of viruses from as early as Crevaux’s incorporation of the phrase into scientific travel writing to contemporary ideas about virus existence. These contradictions point to fundamental failures in the operation of global security regimes,
prompting us to imagine social worlds that lie beyond the horizon of national belonging and the ensnarement of empire.

**A visual archive for the modern virus**

After Beijerinck coined the term “virus” in 1898, TMV founded an entire category of infectious agents, becoming the prototype for this entity called viruses thereafter. Viruses eventually were identified as sub-cellular, sub-microscopic, non-living pathogens that carry genetic material, but lack a metabolism for reproduction. Hence, they are understood to rely on host cells to generate. Viruses are also regarded as integral to processes in genetic mutation, propagating genetic diversity and propelling evolution. The earliest identified viral pandemics, such as the 1918 Spanish flu, were understood to have been due to a mutational virus whose transmission was believed to be greatly enabled by the increased movement and intimate quarters of military soldiers during World War I. These conditions of mobility and proximity initiated global concern about the potential of viruses to spread (Barry, 2004). In other words, viruses have been conceived as simultaneously central to and a threat to biological life. They emerge in the instances where national borders are expanded and/or shored and where bodies commingle promiscuously across the lines of scrimmage.

As crucial as they are to questions of biological existence and species survival, viruses remained invisible until TMV was crystallized in 1935 and, in 1946, photographed through the electron microscope (Zaitlin, 1986, p. 110). Although the technique for isolating, visualizing, and proving TMV’s discrete existence was disputed by experts, the authority of the ability to visually verify viruses as a category of infectious agents was widely accepted (Kay, 1986). In turn, the electron microscope retained its status as a privileged mediator of scientific “truth.”

With the foundation of viruses in the proof of microscopic imaging, we find a turn in logic in which visual evidence predominates over written form, even as the products of visual methods are riddled with
contradictions and elusiveness. According to Alberto Cambrosio, Daniel Jacobi, and Peter Keating (2008), the capacity of microscope photographs, or micrographs, to administer scientific proof required that “linguistic or logical reasoning [be deemed] a mere supplement to the visual component” (p. 136). The visual language used to describe the appearance of such images no longer operated metaphorically, but literally and inconspicuously. That is, the images were regarded by scientists as speaking for themselves, and in speaking for themselves, the images were viewed as self-evident. Further deconstruction of the self-evident truths embedded in scientific images requires that we examine how colonial scientific travel writing and the historical conditions of its audience reception helped shape scientific reading even before the advent of micrographs. In the case of virus discovery, tracing Crevaux’s deployment of visual translation for the Spanish colloquialism *el tobacco se ha mulato* provides a means for perceiving how race and visibility are aligned in science such that scientific self-evidence is rendered in explicit racial terms.

Figure 1. The title page of Jules Crevaux’s *Voyages dans L’Amerique du Sud (1880-1881)*, which contains the archival reference to the tobacco mosaic virus he encountered during his fourth expedition into the South American interior.
In colonial scientific writing, visual translation became a fundamental methodology for the spread of scientific discourse well before the late nineteenth-century discovery of TMV (Bleichmar, 2012). In applying these modes of visual criticism and analysis, we see in Crevaux’s travel writing a challenge that tobacco crop failure posed to modern scientific observation. Printed in 1883, *Voyages dans l’Amérique du Sud (1880-1881)* is densely packed with his observations of Southern American peoples and landscapes (Figure 1). In the description of his encounter, and its traces in contemporary scientific and historical texts, there remain visual and semantic excesses irresolvable by scientific rationalization. The following is an excerpt from his journal, which has been cited repeatedly in scientific and historical literature. As he states:

> Depuis quelques années le tabac d’Ambalema est atteint d’une maladie: *el tabaco se ha mulato*, comme disent les habitants du pays dans leur langage imagé, c’est-à-dire que « le tabac est devenu mulâtre ». La feuille est racornie comme une feuille de chou ou comme des cheveux de mulâtre. On attribue cette maladie à la sécheresse relative de ces dix dernières années. La première année, la récolte est abondante mais le tabac est médiocre. La seconde année, on recueille moins de feuilles saines mais elles sont de meilleure qualité. La troisième année enfin, le produit est exquis mais insignifiant comme quantité (p. 401, emphasis included).

For a few years Ambalema tobacco has been suffering from a disease: “el tabaco se ha mulato,” as the locals would say in their imaginary, which is to say, “the tobacco has become mulatto.” The leaf is shriveled like a cabbage leaf or like mulatto hair. This disease is attributed to the relative dryness of the past decade. The first year, the harvest is plentiful but the tobacco is mediocre. The second year, fewer healthy leaves can be collected but they are of better quality. Finally, in the third year, the product is exquisite but
insufficient in amount (emphasis included).\textsuperscript{7}

Crevaux’s observation illustrates the transit between nineteenth century natural and biological sciences and between colonial and modern industrial worlds. It reveals how scientific beliefs about life take form in concert with economic imperatives. Strikingly, Crevaux’s reference to a \textit{mulato} subject collapses the distinctions between plant and human life, with the \textit{mulato} subject assuming both human and non-human characteristics. Although he notes the phrase is proper to Ambalema locals, he translates it into French and provides at his own accord racialized visual descriptors of the diseased plant: the fragmented \textit{mulato} body—a specimen of “mulatto hair”—creates or stands in as synecdoche for a visual and universal language of science. This visual translation effectively synthesizes the colonial racial order with the emerging discourse of biology as a form of scientific universalism. As a method for communicating scientific observation, visual translation is used by Crevaux to make knowledge transparent.

What Crevaux’s visual translation points to, however, is not so visibly evident. Although \textit{Voyages} is filled with illustrations of peoples, landscapes, and maps, none of these images refers specifically back “el tabaco se ha mulato” (Figure 2). Readers must infer the feeling and touching of the dry surfaces of hair and plants represented, a movement that is presumably similar to the way Crevaux’s eyes and/or hands had touched his subjects. Crevaux’s \textit{mulato} reference draws together a correlation between humans and plants; the \textit{mulato} is a connective figure that stands in for a conception of “life.” Yet the \textit{mulato} figure’s abstraction into a piece of hair likened to a shriveled cabbage or tobacco leaf renders this racialized body as sub-par to the human. The \textit{mulato} forms a visually textured mark of racial difference in the field of modern scientific vision.
Figure 2. Crevaux’s reference to the later-named tobacco mosaic virus as “el tabaco se ha mulato” appears on the page above (right) amid etched printings of hand drawn maps and pictures of townspeople.

While it is impossible to assume the vantage point of the late nineteenth-century reader, it might be safe to say that Crevaux’s use of the term *mulato* provided a referent—a feeling of quality—without having to conjure a clear image of biological continuity between humans and tobacco plants. That is, it offered a visual rendering of the literal transformation of leaf into human body. Dryness in texture is presumably a quality believed to be shared by the racialized subject’s hair and the afflicted plant leaf, and a designation that marks these biological bodies as diseased and compromised consumable products. For Crevaux, free market principles can be visually inscribed; racial difference is constituted as a visual scale with which to evaluate market quality.

According to historian of science Daniela Bleichmar (2012), since at least the eighteenth century, the texts and images in Spanish and French colonial scientific writings helped train its reader to become “an expert observer” (p. 90). Bleichmar proposes that European colonial scientific
writing was crucial to the scholarly and popular geopolitical mapping of the world. The lay reader experienced scientific expeditions through travel writing. The careful illustrations and paintings that adorned these books held the “capacity to abstract, visually incarnate, and mobilize plants that remained…unseen and unknown, even three centuries after Spaniards first encountered New World nature” (Bleichmar, 2009, p. 455).

By reading about the *mulato* descriptor for the tobacco pathogen, Victorian readers of Crevaux’s text perceived an unruly, imaginary frontier for science and its lay audience. The perceived wildness of the South American landscape was sensationalized in U.S. news stories about Crevaux’s demise during the expedition while journeying through Bolivia, where Crevaux and his crew were reportedly “attacked by a mob of Tobas Indians” and “massacred” after reaching “Teyo, the capital of Tobas.” The crew’s fate was reported in the commercial section of at least one California newspaper amidst deliberations on South American foreign diplomatic relations. These news media accounts frame South America as a new and unpredictable frontier for western modernization—a world in need of law and order and a last bastion of conquest for Euro-American Empire.

Crevaux’s visual translation of the *mulato* figure shows how scientific books about South America were especially important to the operation of the global market economy. In their books and other writings, naturalists often provided the collector with aesthetic criteria for the “order and taste” of specimens for display in one’s home (Bleichmar, 2012). Bleichmar argues, the “images, words, and objects…informed part of a globalizing project…which consisted in creating and circulating abstracted natural facts” (pp. 445-446). In other words, the movement of nature in the form of scientific image commodities connected the European domestic space aesthetically and economically to the South American landscape. Furthermore, these books functioned to normalize the Victorian reader as the ideal consumer of said images while estranging colonial racial subjects in their representational forms.

By comparing hair to plant leaves, Crevaux reduces the *mulato*
subject to a representational natural commodity. He makes the term *mulato* a visual aesthetic, a racialized signifier that is removed from the body of an imagined *mulato* subject. Through the abstraction of racial difference in his scientific observations, Crevaux participated in the ongoing disenfranchisement of Indigenous subjects and the extraction of labor from formerly enslaved African descended peoples for the purposes of tobacco agricultural industrialization. However, the abstraction of the *mulato* as a representational commodity also underlies the anxiety around the unclear terms for policing race and segmenting the labor market in the postslavery period of the new Colombian republic.

**Representing race: Tobacco and surveillance at the agro-industrial frontier**

The *mulato* mentioned in Crevaux’s travel writing, and as referenced by Ambalema locals, is a racial representation that visually codes the value of tobacco as a consumer product while abstracting racialized laborers as commodifiable, representational subjects, a necessary condition for the institution of social and economic control in the new Colombian republic. However, this *mulato* reference without an image also yields excessive representational meaning, which even the late nineteenth century reader may have sensed. One can begin marking this excess through a reversal of the scientific gaze, or through an analysis of the accretion in the visual logic of this racial representation. The excesses in Crevaux’s racial representation reveal the harsh economic and political conditions to which workers were subjected in the process of tobacco agricultural industrialization in Ambalema.

Tobacco agri-business held a unique function for Colombia specifically, and for imperial projects generally, during the nineteenth century. Social control and labor productivity were crucial for industrializing nations attempting to gain footing in tobacco’s global market. According to Latin American historian John P. Harrison (1952), tobacco was Colombia’s “first contact” with the world of nineteenth-century
free trade. The export of tobacco reversed the course of Colombia’s economic stagnation (Harrison, 1952, p. 163). At the height of Colombia’s lucrative cultivation of tobacco, Ambalema’s export directly supplied major European and U.S. cities such as London, Bremen, and New York (Harrison, 1952, p. 163).

After the 1851 Colombian abolition of slavery, African, Indigenous, and mulato subjects were denied land rights and forced into debt peonage. As elsewhere in post-Independence Latin America, laws were created to arrest those classified as “idlers, gamblers, dancers, day-laborers,” and other “vagrants,” and to force them to work on tobacco lands (Harrison, 1952; Salvatore, 2000, 2003). Those who resisted were flogged and starved (Harrison, 1952). Armed guards patrolled roads and paths to maintain the orderly means of production and prevent direct sale of tobacco by workers. French-educated Colombian physicians closely monitored the social and sexual behavior of these laborers, accusing the laborers of failing to properly rotate crops and spoiling the harvest through excessive liquor consumption and the transmission of venereal diseases that resulted in compromised work performance (García, 2007). Crevaux’s focus on the mulato figure points to increased state and scientific monitoring of racialized laborers in the effort to maintain control over their lives and of the means of production. Workers’ social and sexual habits were interpreted to underscore arguments about whether they had nurtured a strong work ethic that would translate into the increased productivity necessary to prepare tobacco for mass-market consumption.

The observational methods of Crevaux also allowed for the Victorian consumer to take up practices of colonial social monitoring from afar, surveilling and exploiting the representational bodies of racialized workers by reading Crevaux’s text. By the mid-nineteenth century, the advent of tools to mechanically reproduce images, such as photographic engraving, altered travel writing. Unlike his late eighteenth- and early-nineteenth-century counterparts who employed painters, Crevaux hand-illustrated and photographed his subjects. These images were recreated
as engravings or etchings on metal plates that were then developed into print images in his published expedition volumes. Crevaux’s books are exemplary of how the arrangement of words and images printed from etched and engraved reproductions effected a kind of photorealism that affirmed the identity and perspective of a consumerist European literate class.

Crevaux’s observational eye cultivated the taste- and class-making visual practices that distinguished the Victorian “self” from the un-modern “other.” His travel writing fused the practices of scientific and consumer surveillance in Victorian visual culture through textual and pictorial relay. Words and images worked together to aid an imagined European audience in creating “perceptions of themselves as a community defined by leisure and consumption” (Denisoff, 2009, p. 254). The privileged Victorian perspective encouraged “pleasure-seeking and consumerism” as a mark of European middle-class life (Denisoff, 2009, p. 254). Moreover, the text and visuals in Voyages reified the presumed objectivity of photography that also privileged European modernity. Put simply, the empiricism in Crevaux’s scientific gaze was bound up with the desires of its Victorian readership.

The aesthetic impact of photorealism in travel writing highlights the growing influence of late nineteenth-century technologies of vision to, according to Walter Benjamin, enact the “desire…to bring things ‘closer’ spatially and humanly” (as cited in Rony, 1996, p. 9). For Crevaux, and for the reader of his text, the simultaneously biological and spatial remoteness and nearness of the “other” compressed space and time. This paradoxical sense of intimacy generated a kind of pleasurable consumption of the racialized “other” that could be enacted by European audiences from a distance. The late nineteenth century observer arrives simultaneously at the town of Ambalema and at the threshold of humanity. Crevaux’s travel writing yields not simply an experience with travel, but the instantaneity of images and products to represent and make aesthetically pleasurable—for scientists and the lay reader alike—the contradictions in mass industrialization. The pleasurable consumption of racial
representations in scientific travel writing helped rationalize the slave-like conditions for racialized laborers and the unequal economic and structural development of nations.

While visual consumption was central to earlier modes of naturalist writing, it became ever more integral in the uses of biological science to render taste and value in the global market by the time of Crevaux's writing. Representational consumption in scientific texts facilitated the extraction and abstraction of racialized industrial labor. Specifically, it became a means for aesthetically and ideologically disciplining racial and class segmentations necessary for industrial labor and consumerism. Yet even as greater emphasis was placed on visual technologies to expand the Victorian reader's perception of the world, the abstraction of racialized representations ironically meant a less clear image by which to recognize, track, and maintain racial boundaries. In this emergent visual economy, Crevaux’s visual translation of the *mulato* figure painted a strange picture for racial difference.

**Passing infection: The racial character of viruses**

Although the term *mulato* underscores colonial racial and sexual systems for classification, its visual translation in Crevaux’s text also highlights late nineteenth-century and ongoing permutations in race. By “sexual systems” I refer not only to the act of sex, but to the gender and (hetero)sexual norms of biological reproduction that get coded as family lineage or heredity. Crevaux’s writing reveals how the threat of racial passing correlates closely with the undetected passing of viral infection from one biological body to the next. Embodied through the figure of the *mulato* are marginalized societies that existed on the edges of the global frontier, which challenged systems of racial and sexual administration and came to represent social possibilities alternative to modernization and the world market economy.

The unstable visual identification of the term *mulato* applied to racialized persons can be traced back to its sixteenth and seventeenth
century colonial usage across the Atlantic, and even further to fourteenth and fifteenth century Iberia. Focusing on the New Kingdom of Granada, which roughly corresponds to contemporary Colombia and Venezuela, Joanne Rappaport (2014) argues that one’s phenotype did not immediately limit one’s social categorization and status. Unlike the commonly cited “casta,” which delineated racial categories in New Spain (colonial Mexico), “mulattos … [of] African-European and Indigenous-African parentage…or similar permutations could also be considered part of the European population, particularly if they were members of the elite” (p. 61). Hence, appearance was not the only method to mark social classification. Instead, to understand colonial conceptions of race in New Granada, one should consider how race was “passed on” according to inherited social status.

María Elena Martínez (2008) analyzes how, in sixteenth century Spain, statutes surrounding limpieza de sangre (“blood purity”) hinged on the belief that Muslim or Jewish lineage was passed down in spite of conversion to Christianity, making successive generations vulnerable to cultural and biological contamination through blood and breast milk. In this historical moment, the proto-type for race emerged, identified as a process of sexual (and later biological) reproduction and heredity. The suspicion of blood impurity, and requisite certification proving otherwise, also opened the door for scrutinizing people who were mixed with others of European, African, and Indigenous American descent (Martínez, 2008; Rappaport, 2014). In short, the promulgation of social categories and the simultaneous lack of a clear visual schematic for measuring race means social boundaries were not simply slippery but shifted according to context, assuring that racial passing occurred with regularity.

If passing is conditional, then the structure of race also changes in the instances in which passing takes place. Rappaport argues that the colonial vision used for socioracial groupings, such as “mestizo,” “mulatto,” “indio,” “negro,” and “español,” operated through “floating signifier[s] that can only be interpreted situationally” (pp. 272-273). She highlights the use of calidad (quality)—which includes traits such as individual status, social
ranking, comportment, clothing, and language—as a mode of classification, noting that categorization was, at times, legally and socially modifiable, in spite of physiognomic appearance. Apparent in the phrase “el tabaco se ha mulato,” racial passing became a metaphor for describing crop infection or the passing of viruses from one plant to another. Conceptualizing the virus as an invisible pathogen suggests that race, as a structure for and measure of human quality, was also undergoing profound changes in relation to systems of visual surveillance.

For the developing Colombian nation, race became increasingly demarcated according to the quality of one’s labor, measurable by production. By pathologizing workers, the extension of slave-like conditions was elided and the association between racialized and disenfranchised status was naturalized. As mentioned earlier, state and medical authorities described tobacco workers as exhibiting improper consumer behavior, sexual immorality, unhygienic practices, and a tendency toward illness. Workers were racialized as unfit for sexual and biological reproduction and their pathological “racial character” could be passed undetected onto other biological bodies, including the plants with which they came into contact. Their poor racial character was reflected in their low productivity and inherent inability to participate in the developing Colombian republic. Denied rights, these tobacco laborers became strangers on the land they formally lived in and farmed on and were systematically excluded from the polis of the nation.

As a colloquialism for Ambalema locals, “el tabaco se ha mulato” refers to crop failure, but it also articulates the process for racialized workers’ estrangement from the land and polis. The incongruent figurations of the *mulato* subject in the modern scientific archive infinitely refract colonial and modern scientific visions, opening onto alternative knowledges about viruses. In the visual translations of the racial phrase, an “archive of secret visuality appears in the other senses” to “leave traces, shadows, remnants in lieu of visible documents” (Lippit, 2005, p. 31) that show why the appearance of *mulato* in viral discourse conjures a particular form of semantic excess that resists rational thinking.
Viral visions: A visual critique

In tracing the semantic excesses of “el tabaco se ha mulato” across scientific and historical texts, I offer the term “viral visions” as a framework for attending to connections between past and present scholarship on the pathogen foundational to viral imaging and knowledge, TMV. Viral visions analyze how the accrual of scientific knowledge about viruses relies on repetitious references to race and sex in the archive, which naturalizes the inscription of race in viruses.

Contemporary plant virologist Karen-Beth G. Scholthof (2008) offers an explanation of “the origins of our understanding of ‘the nature of the virus,’” demonstrating how visual signifiers of race operate today as commonsensical to modern scientific vision. She states that:

The disease was called amulatamiento, the etymology of which was suggested to be from “el tabaco se ha mulatto (sic).” From my translation, this can be interpreted as “the tobacco leaf appeared as mulatto or a mixture” and by extension, a characteristic mosaic or mottled pattern on the leaf. The symptoms were described as a mixture of dark green and light green areas, reflecting typical symptoms of a Tobacco mosaic virus (TMV) infection on tobacco…This new disease caused the plants to take on “a leaden-gray” color and the tobacco “was extremely bitter to the taste” (para. 4, emphasis included).

Scholthof draws from John P. Harrison’s (1952) essay, “The Evolution of the Colombian Tobacco Trade, to 1875,” which footnotes Crevaux for an etymology of the term “virus.” Harrison links the phrase “el tabaco se ha mulato” to the idiom amulatamiento. However, nowhere in Crevaux’s Voyages does the term amulatamiento appear. The ellipses in visual translations can immediately prompt the reader to look elsewhere, beyond the pages of Crevaux’s book of origin.

When comparing the linguistic differences of terms deployed between Crevaux’s work and Scholthof’s reiteration of his origin story, the scientific gaze becomes more diffused in the latter. For instance,
Scholthof’s misspelling of the Spanish term *mulato* as the English word “mulatto,” and subsequent English translation of the term as “mixture” imply heterogeneous meanings and temporalities. It is already difficult to envision what racial “mixture” looks like, and becomes even more difficult to imagine when considering the various national, regional, and historical contexts from which the distinct linguistic usages of *mulato* (Spanish/Portuguese), *mulâtre* (French), and mulatto (English) emerge to refer to the varying racial and phenotypical appearances of human (and non-human) subjects. Additionally, Scholthof’s description of the disease’s appearance upon the leaf as “mosaic” suggests another instance of aesthetic (mis)translation between the word *mulato* and its deployment as a mark of visual difference and biological infection.¹⁸

There are insistent gaps in meaning resulting from the translations between “el tabaco se ha mulato,” “le tabac est deven mulâtre” (Crevaux, 1993), “the tobacco leaf appeared as mulatto or mixture,” *amulatamiento*, and “mixture.” However, across these instances of translation, the Spanish phrase remains intact as the source for these semantic transfers. “El tabaco se ha mulato” serves as the fulcrum around which the multiple translations must be visually and symbolically organized. The phrase simultaneously incites and resists translation, unfolding local knowledges about race, labor, and agriculture that remain hidden from legibility. “El tabaco se ha mulato” designates a lacuna and points to a stubborn refusal against articulation, a refusal that is embedded in the knowledge archive and encircles the term *mulato* and its neighborhood of meanings.

In sum, the reader is offered multiple citations for the origins of virus knowledge which flow through the (mis)translations of the idiomatic “el tabaco se ha mulato.” In each instance, the reader is invited to imagine virus existence through Crevaux’s invocation of colonial racial language and the visual and textural cues he extends to mark aberrant sexual and biological reproduction. These racial and sexual logics are now common to scientific grammar, proceeding through the figure of the *mulato* and masquerading as the term “virus.” Yet, Crevaux’s disfigured *mulato* body—pieces of dry hair and leaf—elicits further consideration of what “el
tabaco se ha mulato” may mean since it does not provide a discernible image. A comparison between the phrases “el tabaco se ha mulato” and *amulatamiento*, which retains its own discursive analysis of colonialism, offers some insight into how inchoate images of racialization have become the basis for scientific rationalization of virus existence.

In *Cuban Counterpoint: Tobacco and Sugar*, Fernando Ortiz (1947) introduces the concept of *amulatamiento*. Ortiz does not discuss *amulatamiento* and tobacco in the same text; the term emerges in his other writings about Cuban music and food. However, there are clear ideological links that can be drawn through his emphasis on tobacco history as a prime example of “Indo-African transculturation” (p. 195). Mapping this intellectual link may explain why Harrison, and in turn Scholthof, came to assume an equivalence between *amulatamiento* and “el tabaco se ha mulato.”

Ortiz argues that global tobacco production and consumption operated as “transcultural processes” that left a stain on European and U.S. social, cultural, and economic practices. His discussion underscores tobacco as a complex cultural activity that brought Indigenous- and African-descended peoples together in opposition to European colonizers. For example, Ortiz describes TMV as “supernatural” and “magic[al]” (p. 12), pointing to the ways tobacco both allured and repulsed its European consumers. He explains that the infectiousness of TMV, and the mottling of the plant leaf, provided religious confirmation for Europeans that tobacco was “evil.” TMV took on the character of African and Indigenous resistance to colonization through the historical cultural uses of tobacco. Furthermore, laboring together in tobacco plantations possibly united disenfranchised racial groups who were socially and economically distanced from whites, thereby enacting kinship among the dispossessed and imaginations of being beyond empire. What this suggests is that the racial and social organizations behind tobacco cultivation and consumption constituted a site of political and economic struggle against hegemonic constructions of empire both prior to and after historical decolonization.
This cultural and analytical framing draws attention to an interactive epistemological relation between tabaco and mulato that critically speaks to processes of racialization from the colonial era to the present. Creavaux’s translation of the term mulato highlights the concern about agricultural industrialization as fundamentally about controlling racial, sexual, and biological reproduction. Reproductive control functioned through visual, symbolic, and scientific management to secure both the national cohesion of the new Colombian republic and the circulation of tobacco commodities in the global market. Linking the words mulato to tabaco, then, suggests multiple ways of perceiving and making sense of how racial, sexual, and biological transgressions appear, adapt to, and are adapted by, modern knowledge regimes. Profound antagonisms emerge between images and meanings embedded in the look Crevaux applied to the mulato body and inherited as the visual cues that signify TMV.

Translations of the term mulato into convoluted ideas about color were applied to the tobacco leaf in this early theorization of virus existence. Conflicting views on how to visually mark tobacco crop failure begin from Crevaux’s description and ricochet across Harrison’s reference and into the present through Scholthof’s description of the “mosaic” disease. For Scholthof, “mosaic” refers to “a mixture of dark green and light green areas.” At the same time, she affirms Harrison’s portrayal of the disease’s onset as “a leaden-gray” pigmentation of the plant. In contrast, Beijerinck’s (1898) earlier, foundational work on TMV shared a broader range of concerns about plant development and appearance. In the English edition of Beijerinck’s chapter, the first symptomatic signs manifest in malformation and retardation of the plant’s growth in the “midrib and of the principal lateral veins” (p. 46) of the tobacco leaf. This leads to a “blister-like” surface and spots where “chlorophyll was entirely lacking,” which Beijerinck insistently referred to as “albinism” (pp. 46-47).

Taken together, these works on TMV conceptualize the infected tobacco plant as an imaginative surface for seeing distinctions between exteriority and interiority. Visual markers of race are read onto the surface of the plant to indicate virus presence. While Beijerinck’s article also
accounted for the shape and texture of the plant leaf, overall color became definitive of the visual and empirical logic of virus infection.

These references bring into relief questions about the healthy signs of plant life, or life generally. Referring to crop failure as “el tabaco se ha mulato,” on the one hand, and plant leaf albinism on the other, pushes in two different directions what discoloration can mean. The definition for proper leaf coloration is suspended between darkness and lightness, or to be more precise, between the polarities of black and white, with each pole denoting a radical change in plant health. Resolving this chromatic quandary in scientific vision can be seen in Scholthof’s descriptor of “mosaic,” an aesthetic assembly of variant pieces tantamount to “mixture.” However, the lasting historical reference in the modern knowledge archive that is appended to the “mosaic disease” is “el tabaco se ha mulato,” or amulatamiento, and not albinism. This reference to color amalgamations as an “indigenizing” and “darkening” of tobacco leaves unsettles the harmony of the way this colorful conglomerate is imagined. Put simply, the discourses of scientific rationalization and progress fail to account for a variety of social and discursive relations that are otherwise expressed through “el tabaco se ha mulato.”

“El tabaco se ha mulato” encapsulates linked anxieties about race, reproduction, and contagion. The phrase articulates the inseparable and uncontainable histories between race, sex, and viruses that continue to threaten the biological order of things. In effect, the conceptualization of the virus is a manifestation of different national and colonial histories, multiple modernities, contrasting ontologies, racialized intimacies, and practices of looking. Examining viral visions across these scholarly texts points out pathways to divergent histories and strange social worlds that exist at the limits of representability, and therefore beyond modern state and scientific surveillance.

**Stranger intimacies and queer decolonizing**

To conclude, I draw upon decolonial, feminist, and queer of color theories
to examine how “el tabaco se ha mulato” opens onto alternative geographies and social relations. Drawn together, these discursive tools counter the tide of scientific rationalization and linearly filed histories that wash the shores of memory. These analytical frames work in concert to seize upon the knotted temporalities in which virus representations form a palimpsest of racial, gender, and sexual discourses. As Emma Pérez (1996) argues, the “time lag between the colonial and postcolonial can be conceptualized as the decolonial imaginary” (p. 6). For Pérez, the feminist practices of colonized women implemented the decolonial imaginary as a “rupturing space” to the “written history”—a history that “decolonizes otherness.” As I will show, decolonizing otherness, or strangeness, in science is also a queer gesture.

Lingering in the time lag of the queer and decolonial imaginary, I investigate the etymologies and applications of the terms virus and mulato to show how they are mutually imbricated in the historical structuring of nation, empire, and geopolitics through language, vision, race, and sex. The interactive relation between these two terms also produces an infective logic that fails to effectively translate the spatial and temporal coordinates of modernity. Even as the two words map history and geopolitics, they also expose its fault lines, thereby revealing social and discursive relations beyond nation-state belonging in the time of western empire.

The Latin term virus had been a designation used by science practitioners as early as 1728 to generally describe vectors for infection, especially venereal disease. However, Beijerinck coined the specific use of the term when he published his research in Dutch, German, English, and then French. Using Latin to name the infectious agent assembled scientific knowledge about the tobacco plant across geographical and national divides. However, the need to publish Beijerinck’s work on the virus in Dutch, German, English, and French manifested ongoing tussles and transfers of colonial and geopolitical power among competing European and U.S. empires, culminating in a globally structured agricultural industry. Control over this global industry also meant control
over knowledge governing the landscape, geography, and laboring bodies involved in tobacco cultivation in the Americas and other current or former European colonies.

Naming the new pathogen virus also produced unintended consequences for imperial powers. According to Ed Cohen (2011), the modern scientific application of the term virus entails a paradox. He argues that the host-parasite relation used to conceive of viruses is derived from the political theories of ancient Rome, which represented itself in the term “host.” “Host” comes from the Latin eponym “hospes,” which means “guest, host, and stranger” altogether. Furthermore, “host” carries with it a relation to property whereby “the master of the house” recognizes the other as a guest when the latter respects the propriety of the former. An affront to propriety, on the other hand, results in recognition of the parasitic status of the guest. Whereas the guest enters into a relation of familiarity and is treated with hospitality, the parasite is perceived as a stranger and thus met with hostility. Hence, the meanings of host, guest, and stranger are intimately associated with one another, but only the host-guest relation grounds the meaning of belonging, while the parasite becomes estranged and often considered the “enemy.” This host-guest-parasite relation, I would add, is the structuring principle for modernity. To be clear, the settler colonialist is not simply a “parasite” that usurps the land and consequently becomes the new “host.” This would assume that the host-guest-parasite differentiation existed prior to encounters with western colonialists. Rather, the settler colonialist becomes the host by estranging bodies of color from the land and polis, namely by dispossessing Indigenous peoples, enslaving those of African descent, and targeting subaltern groups generally with protracted genocide. Furthermore, the host-guest-parasite relation organizes the logic of national incorporation, wherein settler colonial rule is naturalized and some of the “others” are allowed to remain as “guests” and the rest targeted as “parasites” for immediate or systematic exclusion.

The scientific and state exploitation of disenfranchised racialized workers during the early Colombian republic occurred through the
estrangement of these subjects from the public sphere. That is, to borrow from Nayan Shah’s (2011) conception of “estrangement” as a form of “queerness,” the nascent Colombian republic and its educated elites implemented ideologies and practices (much like those in the United States and other nation-states) that “distributed protection and resources in ways that exacerbated the vulnerability of transience” (pp. 261-262)—a transience embodied by those alienated from the nation. This form of estrangement, the production of queerness, included the persecution, disenfranchisement, and medicalization of the social and sexual intimacies of racialized populations, state practices deployed under the mantle of civilizing the burgeoning Colombian nation.\(^{23}\) The pathologization, surveillance, and violence applied to the racialized worker also generated the explanatory force for tobacco failure, a narrative which links the sub-microscopic and pathogenic virus to racialized bodies targeted for suppression or eradication.

In this sense, the racialized workers, represented in the archive as mulato, were historically supplanted and estranged from their own lands in order for the nation to be built. The mulato figure is both strange and queer because it represents social and sexual practices that do not conform to industrialism, biologism, and nation. Conceptually and etymologically, it resists the social and sexual norms of empire and nation. Mulato and amulatamiento share the key term mulata/o, which is both a Spanish and Portuguese word, and has varied colonial, national, and historical meanings and circulations.

Embedded in the term mulata/o is a central concern over race, sex, and the potential for miscegenation to upset western empires and their rule over colonies through the administration of racial typologies. Inherited from Spanish and Portuguese empires, the etymology of the term mulata/o bears the colonial trace of the Spanish/Portuguese word mula which names the infertile female progeny of a horse-donkey mix. Hence, the term mulata/o is etymologically queer because it simultaneously names the non-reproductive consequences of certain animal husbandry and the impossibility of racial purity among human subjects, and refuses the
structure of species hierarchy fundamental to Darwinian biological and evolutionary thinking. As a figure of unrest in colonial racialized labor, the *mulata/o* signifier continues to resist dispossession and knocks on the nation’s door through its resurfacing in the archive in the form of viral discourse. However, instead of hailing this queer “stranger,” nations recommit to settler colonialism and the originary act of modernity’s violence by targeting the racialized stranger epistemologically, medically, politically, and militarily.

What would it mean to heed the queerness of the stranger? Shah also states, “‘[S]trangerhood’ is a crucial ingredient for…unconventional yet widespread sociability [that] reveals neglected models for democratic livelihood and distributions of ideas, resources, and social well-being” (pp. 266-267). Instead of emphasizing “civic sociality” and intimacy among families and familiars, he calls for openness to “queer relations” that “cross boundaries of space, class, race, and gender in ways that make the practice of democratic, egalitarian, and human relationships both imaginable and viable” (p. 266). I consider the historical strangerhood of the *mulata/o* figure—its queerness—in the modern virus archive as an incipient sign for global *insecurity*; a visual hermeneutic signaling the incapacity for Euro-American imperial formations of states and national belonging as arbiters for freedoms. To heed the stranger is to dismantle the host-guest-parasite relation that is foundational to modernity, empire, and nation, and to instead seek queer relations.

We must first envision the virus not as a parasite, or even rehabilitate it to become a guest. Rather, we must defamiliarize the settler colonial project in which the nation-state and the idealized white heteropatriarchal citizen-subject emerge as the host, while all “others” are defined in their positive or negative relation. In his study of the rise of the German science forestry industry, James C. Scott (1998) describes the deterioration of crop as the in-built failure of statecraft and mass scale capitalism. He cautions that if we internalize the logics for mass capitalism, then we begin to “see like a state.” Moreover, this focusing of energies on continued bureaucratic management allows us to *not* see this
failure. In the case of early Colombia’s tobacco agricultural industrialization, the landowning elite cultivated a monoculture crop that would yield high value product over successive generations of planting (Harrison, 1952). The elimination of biodiversity within the crop, which included intricately embedded symbiotic relations, gave rise to pathogens that caused successive generations of crops to deteriorate in quality. John P. Harrison and others contend that the virus pathogen alone did not kill the short-lived success of Colombia’s tobacco industry. Rather, they submit, the imperatives for post-independence Colombian modernization and economic liberalization created the exploitative and coercive labor conditions that drove the racialized labor force to the brink, inducing illnesses among the people of Ambalema. These stark circumstances resulted in poor crop rotation and the industry’s eventual demise (Briceño & Mesa Suarez, 2009; Harrison, 1952).

To unsee like a state (Halberstam 2011), we must both “see like a state” and refuse the hierarchies in systems of classification and legibility offered by bureaucratic administration and science as the norm. I am not simply asking that we apply the liberal prescription of paying workers more to make the industry run better, although the improvement of individual lives and communities should be of paramount concern. Nor am I arguing that we simply forgo identities, subjectivities, and state documents that offer crucial protections and communal relations for some. The mulata/o signifier of virus existence asks that we recognize the fundamental racialized violence of the host-guest-parasite relation. In heeding rather than disciplining or ignoring the queerness and strangeness of the mulato signifier in the archive, we should grasp how it explicates the way colonial ideologies for race and sex continue to generate the conditions for modern viral pandemics.

The mulata/o signifier has strangely persisted as a queer subject in the archive of modern viruses because it critiques the host-guest-parasite relation. It generates a model that refuses hierarchies of being, or what Mel Y. Chen (2012) terms “animacy,” which sediment a measure for valuating life according to its “ostensible opposite: the inanimate,
deadness, lowness, nonhuman animals (rendered as insensate), the abject, the object” (p. 30). As a signifier, the *mulata/o* remembers the relations of racialization between sub-/non-human animals and non-human objects. The closely linked *mulato* and virus signifiers in the archive perform a decolonial gesture, refusing separations between past and present, and rebuke, through queer relation, the various levels of “life” rendered distinctive in science. The colonial racial bodies of empire’s past and the microbiological world that has emerged under contemporary empire are brought into intimate association. These signifiers historicize how the violence of estrangement that occurs through mundane practices of racialization in daily civic life is intricately tied to how we envision and treat viral invasion of the body and the nation.

In their combination, *mulata/o* and virus signifiers provide a model for resisting animacy hierarchies and embracing queer relations, as Chen would argue. It refutes “innocence” and “evil” as assignations for those who should be protected and those who should be sick. It debunks the scales of capitalist production and prompts us to see how racial and sexual bodies are harnessed to reproduce the terms of geopolitical power at both the microbiological and global levels. When a virus is recognized in our midst, rather than isolate the infection and the infected, and justify the intensification of securitization, we should imagine and work toward the end of geopolitical borders that create the uneven social and economic conditions in which sickness, particularly amongst communities of color and amidst peoples in the nations of the global south, are produced.

As a viral signifier, the *mulata/o* figure also unravels racial systems of classification and connects decolonial and queer relations between various subjects, places, and times. If we apply the term *mulata/o* to the context of the Colombian agricultural laborer, it may suggest someone who is of Indigenous, African, and Spanish ancestry. In the U.S. context, where blood logics make blackness hypervisible and indigeneity invisible, “mulatto” refers to someone who is Black and white. Like the Spanish term, “mulatto” in the United States dovetailed into scientific explanations for racial mixing, which was thought to produce biological and social
defects in the person designated “mulatto,” defects that included an inability to sexually reproduce (Nyong’o, 2002). Here, we glimpse how the visual translations of “el tabaco se ha mulato” fold together multiple modernities, but ultimately disrupt the fantasy of global order. These overlapping yet contrasting histories offer a different way of perceiving social categories and sexual practices among subjects resisting colonization.

The point is to investigate the alternative meanings opened up by visual translations of the virus archive, meanings in defiance of a closed social and economic system that is based upon nation-state formation and the imperatives of global industrialization. Science redrew a map of biological interiority that suited emerging geopolitical configurations of uneven industrial development and modernization. From this perspective, the developed world emerged as the observer while the developing world was linked to both the tobacco plant and the body and image of the undisciplined, pathological, and racialized subject. However, the indelible connection between the mulato signifier and the advent of the virus recalls the racial and geopolitical contexts under which the virus developed diachronically, as an object of intellectual inquiry, and as a central concern through which historical and scientific scholarship would orient itself to establish “truth” paradigms.

State and scientific surveillance converged to produce the virus as a racialized locus for biological insecurity—a persistent transgression of the emerging global security regime. When faced with pandemic threat, rational logic dictates that nation-states further demarcate and police racial, sexual, and national borders. As in the case with HIV/AIDS, the Ebola virus, and other outbreaks or pandemics, racial, gender, and sexual categories are called upon to describe “risk” groups and to explain how disease is rooted in “risky behaviors.” To deflect attention away from the systemic inequities that produce disease is to deny race, nation, and empire as the structuring conditions for pandemics. This denial is the seat of anxiety that reproduces viral pandemics and global insecurity.

Viral pandemics, I submit, result from global industrial resource
extraction, and the racialization, estrangement, and alienation of laborers, rather than the poor hygiene of individuals. *Virus*, then, capaciously names the desire and failure for geopolitical control through the biopolitical maintenance of social relations. The term registers the intimate and the infinitesimal relations and spaces that often escape visual capture: decolonial and queer social cartographies that do not appear on the physical and psychic maps for empire or modernity. Scientific discourse continues to debate whether the virus is a living thing, leading one virologist to call it an “organism at the edge of life” (Rybicki, 1990). What we might infer is that the “edge of life” is the space just beyond nation-state borders and the geopolitical order. Discovery at the edge of life underscores that the virus is transgressive by definition; that it resides in spaces of “stranger intimacy.” These spaces of transgressive intimacies are signaled by markers of racial difference wherein national boundaries are drawn and exceeded. Viral visions pass between modern knowledge regimes, applying a visual critique that reveals the failures of empire and geopolitics. This way of perceiving viral existence recalls the radical, intimate moments of the past and circumvents present-day geopolitical configurations to imagine queer decolonizing.

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Notes

1 This was Crevaux’s fourth and final expedition, as he perished while attempting to complete this journey. Fueled by the ambition to clear more territory as yet uncharted by Europeans, he crossed the Caribbean coastline and descended into South America, passing through Ambalema (Le Janne, 1883).

2 German agricultural chemist Adolf Mayer (1886) later described the “tobacco mosaic” disease that could be transferred between plants, much like bacterial infection. Dutch botanist Martinus Beijerinck, in 1898, became associated with the discovery of the virus. He replicated Russian botanist Dmitri Ivanovsky’s attempts a few years earlier to identify the causal agent in the infected tobacco plant’s sap. However, Beijerinck recognized the pathogen as something smaller than and distinct from bacteria and coined the term “virus” to refer to it (Zaitlin, 1986, pp. 107-108).

3 Histories written about the tobacco mosaic virus either footnote or leap entirely over the importance of Crevaux’s text. What we are told in most historical accounts is that, since the virus remained unseen to late nineteenth century scientists, its existence was surmised by experimenting with filters used to pass the infected sap from one plant to another (Creager, 2002). While struggling to identify its properties and functions, and without more advanced microscopic technology, Beijerinck (1898) gave the agent the Latin designation virus, which simply means “poison” or “toxin.” During the early twentieth century, scientists renamed the pathogen the “tobacco mosaic virus” (TMV).
Viruses have played a crucial role in our understanding of the purpose and structure of DNA, playing an instrumental role in proving that DNA and not proteins carry the material for genetic inheritance (Hershey & Chase, 1952). Viruses were understood to be the cause of the deadly pandemics of the twentieth and twenty-first centuries, including the Spanish flu, Smallpox, Polio, HIV/AIDS, Avian flu, and Swine flu.

In 1946, Wendell Meredith Stanley, the U.S. biochemist and virologist whose laboratory controlled one of the world’s first electron microscopes, was awarded the Nobel Prize in Chemistry (along with James B. Sumner and John H. Northrop) for being the first to isolate living TMV in pure crystalline form. The microscope photograph, or micrograph, of TMV demonstrated the technological power of the electron microscope on the world stage (Rasmussen, 1997).

As exemplified by the persistence of HIV/AIDS, Ebola, and other viral pandemics, viruses continue to elude our scientific understandings. They also escape our attempts to control them through western-led institutions for global health surveillance, such as the World Health Organization, an entity established in 1947 to address epidemic outbreaks in the aftermath of the Second World War.

I thank Natasha Bissonouth for assistance in translating this excerpt and to Nathalie Burle for ample support in translating the surrounding text.

In this way, Crevaux departs from work that influenced his writings: Charles Darwin’s 1859 theory of evolution. In Darwin’s text, biology is the principle of life that establishes continuity between plants and peoples, and between the observer and the observed (Cohen, 2009). However, Crevaux’s accounts demonstrate how the biological rationale is explicated according to free market principles that can be visually inscribed. The comparison between the *mulato* subject and the plant leaf is drawn to make apparent market quality.
One page before his *mulato* reference, Crevaux describes traveling the winding path of the Magdalena River Valley. He encountered a wilderness that included gigantic trees, severe lightning flashes, the strange melody of thousands of frogs, relentless mosquitos, and local workers who were tired, emaciated, and suffering from illnesses that was termed the “Magdalena Fevers” (Crevaux, 1883, p. 400).


Crevaux’s writings made their way back to France and were published posthumously.

According to Bleichmar (2012), Spanish descendant, botanist, and late eighteenth century “founding father of Colombian national science,” José Celestino Mutis, established a tradition of “economic botany.” His books proved “that the expedition would promptly yield useful and valuable information in the form of natural commodities” (pp. 442-443).

From 1852-1875, while still on the heels of independence, the fledgling republic achieved remarkable success through tobacco farming, which ignited an unprecedented balance of trade such that Colombia’s export began to exceed its import (Harrison, 1952). It was the basis for Colombia’s “one-crop export-economy” and secured new foreign markets in Europe and the United States (Crevaux, 1883; Harrison, 1952).

Agricultural industrialization relied on the exploitation of racial subjects. The population of the early Colombian republic consisted of a “mixture of racial stocks” resulting from the legacy of Spanish conquest, Indigenous subjugation, and African enslavement (Zamoso, 1986). Some enslaved
persons escaped into the tropical forests or the mountains. After the 1851 Colombian abolition of slavery, freed persons joined marooned societies and took up small farms in the mountain ranges. Racially mixed Indigenous and Black populations—who we can infer by definition to be *mulato*—developed agricultural societies on public lands that would later be contested by the private interests of land developers from the “middle strata of Colombian society” (LeGrand, 1986, p. 33).

15 The introduction to *Voyages* mentions Crevaux’s illustrations and use of photography in his explorations. See Le Janne, p. iii. These visual techniques are exhibited throughout this book. The text shows that some images were created by other individuals. However, it remains unclear to me thus far in my research how Crevaux’s writing made it back to France after his death, and which images he may have authored.

16 This printmaking technique preceded the more sophisticated standards for photomechanical reproduction that became commonplace by the twentieth century. However, even as etched or engraved reproductions, these printed images compounded what Dennis Denisoff has described as “the apparent actuality of the photograph with the subjectivity of the handmade image” (Denisoff, 2009, p. 254).

17 While *Voyages* did not contain photographs taken by Crevaux, it is fair to say that Crevaux approached the ethnographic spectacle of his research during this expedition with the eye of both scientist and photographer (Le Jann, 1883).

18 An image of a tobacco plant infected with the tobacco mosaic virus can be found at http://www.apsnet.org/edcenter/intropp/lessons/viruses/Pages/TobaccoMosaic.aspx. The discoloration and dry texture of the leaf was compared to the look and feel of *mulato* skin and hair in Crevaux’s travel writing. Virologists and historians have since referred to this moment in Crevaux’s description as an origin story for the discovery of the first virus.
Ortiz admits that the name *tabaco* has multiple points of potential origin, and a number of assignations, some of which do not refer to the plant itself. Hence, his ideas about tobacco can be deployed without appealing to an essentialization of Afro-Caribbean culture.

Feminist-Marxist science studies scholar Donna Haraway (1990) emphasizes that critically attending to race and gender constructions in the field of science allows a “closer examination” of bodies that have been visually “marked” as other in “very large and durable” histories.

See “virus (n.)” in *Online Etymology Dictionary*.

In the English version, Beijerinck identifies the “mosaic or leaf spot” causation using the Latin phrase *contagium vivum fluidum*, which describes a “living agent” of “contagion” that exists in a “liquid.” He continued to refer to the agent as *virus* several times throughout the essay (Beijerinck, 1898; Bos, 1999). The use of Latin to describe this infectious agent followed from the taxonomical system of biology established by Swedish scientist, Carl Linnaeus, in his publication of *Systema Naturae* in 1735. Following this tradition allowed for a universal recognition of TMV as it emerged on the scene of the late-nineteenth century burgeoning global scientific community. Yet, the languages in which Beijerinck published specifically hailed European and North American regions and nations. These were countries and regions where science formed an already robust field of study. Moreover, the particular nations signaled by language also had vested economic interests in maintaining imperial domination over agricultural industries, and namely over the global trade of tobacco.

France and Britain had both developed a strong and competitive presence in science, especially in the areas of geography and botany, where the French and British had a long history in the exploration of the “natural environment” in the Americas (Pratt, 2008). In the late-nineteenth century, Germany was the center of the European cigar industry, with
much of its manufacture centered in the city of Bremen and the source of its tobacco from the Ambalema region of Colombia, as mentioned earlier (Pando, 2003). Meanwhile, the Dutch had developed a very successful tobacco industry by cultivating the plant on the Southeast Asian island of Sumatra during their long colonial administration of the East Indies (Pando, 2003). Growers in the United States, where tobacco was once a cash crop and was the chief agricultural export in the South prior to cotton in the 1800s, still had a presence in the trade but struggled against these new goliaths of tobacco industry.

23 Marx terms the form of industrial capitalist estrangement of the worker “alienation.”

24 Ambalema locals suffered in particular from the aforementioned illness called the “Magdalena Fevers” (Briceño & Mesa Suarez, 2009).

25 J. Jack Halberstam (2011) proposes in his study of “queer failure” that, to “unsee like a state” we might follow social worlds that remain illegible.

26 Describing the biopolitics of colonialism, Ann Stoler (1995) points out that maintaining dominance over the “carceral archipelago of empire” entailed the colonial management of race and birth, underlining in particular the concern over what to do with “bastard children” and “mixed race peoples” who had varying and antagonist claims to property and inclusion in the colonizer’s nation

27 Walter D. Mignolo (2000) asserts that the act of translation is simultaneously the dissolution of dichotomous relations subtending classificatory systems. What registers is an outburst of “an other thinking.”

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