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The Conservation and Commodification of American Ginseng

by

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An undergraduate honors thesis submitted in partial fulfillment of the

requirements for the degree of

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in

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Table of Contents

Introduction	2
Literature Review	2
<i>Tragedy of the Commons</i>	2
<i>Tragedy of the Commons in Ginseng Literature</i>	2
<i>Framing the Problem</i>	2
<i>Harvesting practices</i>	2
<i>Recommendations</i>	2
<i>Tragedy of the Commodity</i>	2
Historical Analysis	2
Conclusion	2
Works Cited	2

Abstract

American Ginseng, *Panax quinquefolius*, is a plant endemic to Eastern North America. It has an almost three century long history of being exported from North America both as a plant harvested from the wild and cultivated on farms. During this time, the plant has been identified as being at risk for becoming endangered by organizations such as CITES (the Convention of International Trade in Endangered Species) and various policies have been set in place to track trade and control ginseng harvest. Many scholars currently studying the ecology and conservation of American ginseng use a tragedy of the commons framework established by Garret Hardin in order to understand the problem of ginseng scarcity and make recommendations for policies. The problem with this framework is that it naturalizes the socioeconomic context these ecological tragedies occur in and functions more to control harvesters' actions than to affect the total harvest and export of American ginseng. Through a historical analysis of the commodification of American ginseng informed by the theory established by Stefano B. Longo, Rebecca Clausen, and Brett Clark in their book *The Tragedy of the Commodity: Oceans, Fisheries, and Aquaculture* (2015), this work demonstrates that ginseng scarcity is a problem of commodification rather than a problem of open access.

Introduction

American Ginseng, *Panax quinquefolius*, is a plant historically found in Eastern North America (McGraw 2013). It has an almost three century long history of being exported from North America primarily to China both as a plant harvested from the wild and cultivated on farms. During this time, the plant has been identified as being at risk for becoming endangered by organizations such as CITES (the Convention of International Trade in Endangered Species) (2019) and various policies have been set in place to track trade and control ginseng harvest. These policies vary by state and by land ownership but overall, these policies fit within a tragedy of the commons framework established by Garret Hardin (1968). Many scholars currently studying the ecology and conservation of American ginseng use a tragedy of the commons framework established by Garret Hardin in order to understand the problem of ginseng scarcity and make recommendations for policies (Frey et al. 2018, Schmidt et al. 2019, McGraw et al. 2013, Kauffman 2006). The problem with these policies is that they function more to control harvesters' actions than they do to affect the total harvest and export of American ginseng. These types of policies are therefore dangerous because they tend to place the burden of ecological tragedy on individuals participating in the market for subsistence purposes rather than on those capitalizing on the perpetuated commodification that leads to such ecological disasters. Through a historical analysis of the commodification of American ginseng informed by the theory established by Stefano B. Longo, Rebecca Clausen, and Brett Clark in their book *The Tragedy of the Commodity: Oceans, Fisheries, and Aquaculture* (2015), this work demonstrates that ginseng scarcity is a problem of commodification rather than a problem of open access.

Gin-seng is an English version of the Chinese name for the plant scientifically called *Panax ginseng*. The name ginseng is now used for a multitude of medicinal plants around the world. Some of these plants include Asian Ginseng (*Panax ginseng* or ‘true’ ginseng), American ginseng (*Panax quinquefolius*), Siberian ginseng (*Eleutherococcus senticosus*), Brazilian ginseng (*Hebanthe eriantha*), and Indian Ginseng (Ashwaganda or *Withania somnifera*) (Davydov and Krikorian 2000). All of these plants have been called ginseng because of their comparison to Asian ginseng or *Panax Ginseng*, a plant that has been used in traditional Chinese medicine since before the 2650 B.C.. They have been called ‘ginseng,’ primarily by those from outside the region they are endemic to, either because they have similar properties to *Panax ginseng* and/or quite often in an attempt to capitalize on the wide recognition of the name ‘ginseng’ (Davydov and Krikorian 2000). This thesis focuses on American Ginseng, *Panax quinquefolius*¹.

Of all the *Panax* genus and plants otherwise called ginseng, American Ginseng is said to be most closely related to Asian Ginseng, *Panax ginseng* (Kauffman 2006). As I will discuss later in this analysis, whether these two plants are similar and the degree to which they are similar has been long contested. According to biological research, the two plants are similar, but not identical. There are a multitude of studies looking at the differences between the two plants,² while other scholars will lump together American, Asian, and/or Japanese ginseng together when discussing the effects and constituents of ‘ginseng.’³ The two plants have similar constituents, both contain ginsenosides, polysaccharides, peptides, polyacetylenic alcohols, and fatty acids with most of the pharmacological effects being attributed to ginsenosides (Attele et al. 1999), but, in practice, American and Asian ginseng are used for different purposes. As Davydov and

¹ Throughout this paper, I will refer to *Panax quinquefolius* primarily as American ginseng. When referring to *Panax ginseng*, I will write Asian ginseng.

² Give some examples here

³ See, for example, the first pages of Attele, We, and Yuan’s 1999 article “Ginseng Pharmacology: Multiple Constituents and Multiple Actions.”

Krikorian (2000) write, American ginseng is “not generally used as a substitute for the kinds of tonic effect associated with true ginseng” (348). American ginseng is used to treat hot and dry conditions like fevers and coughs while ‘true’ Ginseng is commonly used as a tonic and alterative (Davydov et al. 2000). While there are certainly social and economic aspects of both the naming and comparisons of the two plants, it seems clear from biological research of ginseng that the American and Asian ginseng are related, but not identical.

American Ginseng is a widely collected and exported herb in the United States. Since 1998, most recorded exports are commercial and most are exported to China or Hong Kong. Exported ginseng is either cultivated⁴ or harvested from the wild. From 1998-2015, the recorded exports of cultivated roots have ranged from 128,420 kg to 939,900 kg per year and the exports of wild roots have ranged from 13,246 kg to 43,144 kg each year (USFW 2016). In Robbins’ 1998 report for the Trade Records Analysis of Flora and Fauna in Commerce (TRAFFIC), an organization working on conservation and “sustainable development” the trade of wild animals and plants (Traffic 2019), on American Ginseng, Robbins wrote that over 90% of wild ginseng root harvested in the United States went to East Asia and that in 1996 85% of wild harvested ginseng roots were exported to Hong Kong. A pound of root could be sold for \$632 in 1995 (Robbins 1998). By 2014, the Wall Street Journal reported that a pound of wild ginseng could be sold for as much as \$1,000 in 2014 (Maher 2014).

The American Ginseng trade dates back to 1717, when the first European, Joseph-François Lafitau, learned of a ginseng-like plant in occupied Haudonausee territory. This ginseng-like plant would go on to be called *Panax quinquefolius* or American Ginseng. Since that time, American ginseng has been reported as scarce at various moments. This seemed to become most significant in the late 19th century when cultivation of American ginseng became a

⁴ Cultivated ginseng is ginseng that has been intentionally grown on farm or in a wild area.

much stronger focus in North America. It was also during this time that the US Forest Service Conservation Assessment first reported ginseng's scarcity (Kauffman 2006).

In 1975, the plant was placed on the Convention of International Trade in Endangered Species (CITES) Appendix II list of species (Kauffman 2006). "Appendix II", according to the CITES website, "includes species no necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival" (CITES 2019). CITES requires that export and re-export certificates must be issued for any exporting of Appendix II plants, that permits will only be issued if specimens are legally obtained, and that export is not detrimental to species survival (CITES 2019). Following this listing, states set up various programs and policies for tracking the harvests and commerce of ginseng. These included permits for harvesters and banning areas of ginseng harvests (Van der Voort 2006).

This analysis will begin with a review of current literature on ginseng conservation, which uses a tragedy of the commons framework to frame the problem of ginseng depletion, to explain harvester behavior, and to make recommendations for further research and policy implementation. The following section will introduce the theory of the tragedy of the commodity established by Longo and colleagues which will be argued to be a better fitting framework for understanding the issue of ginseng depletion. The next section will be a historical analysis which aims to situate the current trade of American ginseng in its socioeconomic past in order to demonstrate how European use of the plant is intertwined with its commodification. The retelling of this history aims to show how European introduction to ginseng and the subsequent search for American ginseng was focused on commodification, demonstrate the methods used to commodify the plants, establish that the metabolic rift formed from the plant's commodification depleted American ginseng populations, and, finally, discuss the accompanying

social rifts developed with the ginseng trade. This analysis will draw on the work of historians who have written about ginseng, environmental sociologists, and conservation scholars who have discussed current ginseng policies.

Literature Review

Current writing on the conservation of American Ginseng and current regulations aimed at conserving American Ginseng largely follow a framework of the tragedy of the commons. This is seen through overt references to Garret Hardin's work and other scholars that have developed and applied Hardin's theory. It also seen through work, which, while it does not cite Hardin or directly discuss the tragedy of the commons, the authors' arguments and recommendations align with the framework of the tragedy of the commons. In setting up the theoretical framework for my thesis, I am going to discuss Hardin's "Tragedy of the Commons," I will then discuss current academic literature on the conservation of American Ginseng and demonstrate how much of that literature aligns with a tragedy of the commons framework, and will finally introduce the theory of the tragedy of the commodity which I will spend the rest of the thesis arguing is a more accurate theory to apply to American Ginseng.

Tragedy of the Commons

The tragedy of the commons is a theory developed by Garret Hardin. With this concept, Hardin argues that natural resources held in common property will be "degraded by the competing individual interests of the users" (Longo et al. 2015:28). Hardin sees the tragedy of the commons as an issue of morality and overpopulation. Hardin discusses ecological tragedies in terms of when the carrying capacity of a part of the earth is exceeded and writes about these tragedies of the commons as inevitable with certain population growth. He discusses these tragedies in reference to individual user behavior. Hardin argues that all "rational" (Hardin 1244) users of the commons will decide to overexploit the commons because, since they share

the negative impact of their exploitation with all other users of the commons, they stand more to gain than to lose. Once enough of these users make this decision, it will ultimately lead to the ruin of the commons. The tragedy of the commons argues that all rational users will make this decision, ultimately leading to the ruin of the commons. Using a variety of examples, Hardin suggests several solutions to this problem. These solutions include privatization of the commons or, if they are to be kept public, to “allocate the right to enter them” (1244) based either on wealth, merit, first come first serve, or lottery. Hardin also emphasizes the need to utilize and increase systems of coercion in order to control the commons suggesting taxation as a method of doing so. Ultimately, this theory defends private property and, as Longo, Clausen, and Clark write, promotes a type of state control that is “best characterized as an approach to resource protection that regulates, excludes, or coerces users” (2015:29).

Tragedy of the Commons in Ginseng Literature

The existing academic literature on the conservation of American Ginseng is written by scholars trained in ecology, biology, botany, and economics. There are three ways that the tragedy of the commons framework becomes apparent in these articles: first, when framing the nature of the problem of Ginseng scarcity, second, when discussing various harvesting practices and harvesters’ compliance or lack thereof with existing laws, and third, when making recommendations regarding the future of American Ginseng conservation.

Framing the Problem

Conservation scholars often use the tragedy of the commons as a framework to understand problems surrounding ginseng scarcity. More specifically, scholars use the tragedy

of the commons framework to define ginseng and its habitat as a commons. They primarily use the term “open access resource” (Chamberlain et al. 2019, Frey et al. 2018) which Erwin Bulte and Stefanie Engel (2006) wrote was the more accurate term for Hardin’s concept of common property.⁵ After establishing this definition, authors often cite Hardin and/or related scholars to define the barriers faced for conservation of common-pool resources. This is demonstrated in John Paul Schmidt, Jennifer Cruse-Sanders, James L. Chamberlain, Susana Ferreira, and John A. Young (2019) case study on ginseng and in Gregory E. Frey, James L. Chamberlain, and Jeffrey P. Prestemon’s case study (2018).

In their opening paragraph, Schmidt and co-authors write,

...whether they occur on public or private lands, forest herb populations are, by default, managed as an open access resource (Ticktin and Shackleton, 2011) such that, in practice, location, timing, and the number of people engaged in harvesting is usually unrestricted (e.g., McGraw et al., 2010). Like other open access resources (e.g., many fisheries), populations are prone to overexploitation and rapid depletion (Gordon, 1954; Hardin, 1968). (2019:139)

Since the authors are focusing the article on ginseng and since ginseng is a “forest herb,” the authors are establishing that ginseng is an open access resource. They then cite Hardin and Gordon, who was also important in the development of the tragedy of the commons (Longo et al. 2015), in explaining the conservation problems associated with open access resources therefore demonstrating their acceptance of Hardin’s premise that *open access* leads to depletion. By including this as two of the four sentences in their first paragraph, the authors establish the importance of this definition and demonstrate their functioning within the tragedy of the

⁵ In footnote 7 of Bulte and Engel’s chapter “Conservation of Tropical Forests: Addressing Market Failure” (2006), they write “The term ‘Tragedy of the Commons’ is really a misnomer as the situation described by Hardin is one of open access rather than common property.”

commons framework. This therefore establishes open access as the problem they as scholars on plant conservation are working to solve.

Similarly, when Frey and colleagues introduce ginseng as their object of study, they write:

Wild American ginseng harvest is a secretive affair (Burkhart, 2011), and various factors can make existing ginseng plants difficult to detect (Bailey, 1999). Most of the habitat for ginseng is accessible in rural forested areas. Access difficult to control, and poaching is known to occur (Burkhart et al., 2012; McGraw et al., 2013). This makes *de facto* open access plausible. (2018:101)

Prior to defining ginseng as likely being a *de facto* open access resource, the authors define *de facto* open access resources as resources “where access is difficult to limit and harvests are difficult to monitor and control” (Frey et al. 2018:97) citing Bulte and Engel’s (2006) chapter “Conservation of Tropical Forests: Addressing Market Failure.” Bulte and Engel (2006) further specify that a *de facto* open access resource is a resource that functions as an open access resource despite privatization or other attempts to limit access to the resource. Frey, Chamberlain, and Prestemon are therefore suggesting ginseng likely functions as an open access resource on both private and public land whether or not measures to limit access have been taken. After defining “*de facto* open-access resources,” Frey and colleagues establish the implicated problems of open-access resources when they write,

Status as an open-access resource has vast implications for production, markets, trade, and regulation of these resources, which in turn can influence the availability and sustainability of the resources themselves. A classic example is marine fisheries (Gordon, 1954), which are difficult to

regulate and monitor because of their vast size and international nature, and hunting and trapping of certain wildlife species can also fit this paradigm. (2018:97)

While the authors do not cite Hardin directly in this definition or their initial outline of the implications of open access resources, they do reference build on Hardin's work and write in accordance with a tragedy of the commons framework. Bulte and Engel cite Hardin's "Tragedy of the Commons" in their chapter and reference Hardin's work in order to establish that "open access leads to an overexploitation of the forest resource" (Bulte and Engel 2006:428). While they later argue against Hardin's conclusion that privatization solves the problem of overexploitation of open access resources, their opposition is rooted in their argument that privatization is not effective at limiting access and is not an opposition to the premise that overexploitation is solved by limiting access to resources. They also use Gordon who, as discussed, was an important scholar in developing the tragedy of the commons theory (Longo et al. 2015).

Harvesting practices

Many scholars in the discourse community of ginseng conservation agree that harvesting is the biggest threat to the survival of American Ginseng.⁶ The importance put on harvesting leads them to focus heavily on harvesting practices, harvester behavior, and, as a result of their implementation of the tragedy of the commons framework, the efficacy of efforts to control harvest rates and methods.⁷ In their discussion of harvesting, many scholars use Hardin's

⁶ Kauffman writes: "Root harvesting is generally recognized as the greatest impact on ginseng populations within national forests units" (2006:53)

⁷ For examples of studies devoted to just these topics, see: Bailey (1999); Burkhart et al. (2012); McGraw, James B., Sara South, and Anne E. Lubers. 2010. "Rates of Harvest and Compliance with Regulations in Natural Populations of American Ginseng (*Panax quinquefolius* L.)." *Natural Areas Journal*. 30(2):202-210.; Van der Voort, ME, McGraw James B. 2006. "Effects of harvester behavior on population growth rate affects sustainability of ginseng trade." *Biodiversity Conservation*. 130:505-516.

framework to explain the harvester behavior. This can be seen through McGraw, Lubers, Van der Voort, Mooney, Furedi, Souther, Turner, and Chandler's (2013) literature review on ginseng conservation research and in Frey and colleague's (2018) case study on ginseng.

When McGraw and coauthors' wrote about harvesters and, more specifically, harvester compliance regulations they write,

Hardin⁶² made famous the tragedy of the commons paradigm 45 years ago when writing about overexploitation of natural resources. Individuals will often severely deplete a resource even when they know their actions will negatively affect the long-term availability of that resource. In the case of ginseng, self-interested harvesters could be driven by competition, rationalized by the idea that if they do not harvest a plant they have discovered, someone else will. Competition for a limited resource could encourage resource preemption by early harvest, including harvest in advance of the onset of the season. (P. 71)

The authors use Hardin's theory to explain hypothetical harvester behavior. The author applies the concepts of Hardin's framework to their understanding of the conditions of ginseng harvest. In doing so, they explain to the readers their perception of why ginseng harvesters may overexploit ginseng.

Frey and colleagues (2018) also discussed Hardin when addressing the "governance of common-pool resources" (P. 100),

Common-pool resources were famously discussed by Hardin (1968), in which the rivalrous and open-access nature of a common-pool resource creates a situation in which additional production effort leads to overexploitation and lower overall production. (P. 100-101)

The authors introduce Hardin's theory as the most commonly utilized framework for understanding overexploitation of open access resources. They follow this up with research that

demonstrates that “community based natural resource management” (P. 100) is effective in some scenarios but ultimately state that there are many barriers to this type of governance and few examples of effective implementation. The tragedy of commons therefore stands as their assumed theory to use when creating a program of governance for ginseng and similar resources.

Recommendations

The final section where a tragedy of the commons framework is most frequently made evident is when researchers make recommendations for further action and/or policy for the survival of American ginseng. This is also the area of articles in which a tragedy of the commons framework is evident without authors directly citing Hardin or other scholars associated with Hardin’s work. Since harvesting is often considered the biggest threat to ginseng, many author’s recommendations focus on harvesting. The tragedy of the commons framework becomes evident when authors suggest coercive policies that aim to exclude harvesters or control their behavior. Despite significant, well-cited research in the discourse community demonstrating that current policies aimed at coercion and exclusion are not effective,⁸ many authors recommend furthering coercive measures rather than reassessing their contextualization of the problem they are addressing. This is represented both in McGraw and co-authors (2013) literature review and in Kauffman’s (2006) conservation assessment for the forest service.

⁸ For more information see: Burkhart et al. (2012) which concludes that current top-down regulatory approaches are not effective; Van der Voort and McGraw (2006) in which they conclude that current regulations on ginseng harvesting are not sufficient to protect ginseng; Frey et al. (2018) who suggest ginseng is likely a “*de facto* open access resource” (p. 97) which would indicate that measures to privatize and limit access to ginseng are ineffective; finally McGraw et al. (2013) reference C.H. Freese (1998) in their article when writing “Successful sustainability in open access habitats likely depends on the ultimate management of the resource belonging to those who actively harvest it. Further, these managers of the resource must receive a major share of the economic benefits derived from its use in order for sustainability to be achieved” (P. 72) which contradicts the proposals they suggest.

In their article's synthesis, McGraw and colleagues (2013) make recommendations to further conservation efforts and close with a bleak projection that if these efforts are ineffective, American Ginseng will likely only exist in a commodified form. In making their suggestions for conservation efforts, they begin by writing:

While perhaps unique to wild harvested species, the opportunity for altering population fates by improving management strategies exists, given our current understanding. Current ginseng harvest practices range from unsustainable, which can cause rapid population decline, to stewardship, which may grow populations. Unethical behavior by harvesters is partly to blame for the former; clearly law enforcement is presently inadequate to stem such behavior. An obvious solution is to house ginseng management programs within state agencies, such as Wildlife Departments, that have natural resource law enforcement as part of their mission. (P. 85)

The first half of this paragraph offers brief analysis of the problem of ginseng scarcity. The authors identify that harvester behavior causes populations to grow or decline. They identify the problem of declining populations as a problem of having too wide a range of harvester behaviors and translate that to mean that the current issue of ginseng scarcity is therefore an issue of "management strategies" (P. 85). They blame the harvesting practices that cause population decline partly on "unethical behavior" (P. 85) and call for increased law enforcement focused specifically on ginseng. This analysis fits within a tragedy of the commons framework. It fits first because the authors, like Hardin, see behavior that leads to depletion as a moral failing. Second, by calling for increased law enforcement focused, they, like Hardin, are calling for increased coercion to change the behavior of harvesters. The authors continue this analysis by writing:

In addition, harvest regulations have been slow to change in response to better ecological understanding: while harvest seasons have evolved, minimum age requirements are still national policy even though size is clearly a far better predictor of reproductive success than age. Given that harvesters can be stewards if they plant adequate numbers of mature seeds, encouraging this behavior with size-minimums and optimized harvest seasons can change harvest from a downward vector to a neutral or upward vector for population change. Replacing the age requirement would also allow planting of detached rhizomes as a means of clonally propagating the harvested individual and further mitigating harvest effects (presently, intact rhizomes are required to prove that the age-requirement is met). (P. 85)

Here the authors suggest that by replacing current age requirements with size requirements and adjusting harvesting seasons could increase or stabilize ginseng populations. Again, this fits in a tragedy of the commons framework because it relies on policies to control and regulate harvester behavior.

In Kauffman's conclusion to their conservation analysis (2006), they make a series of recommendations for "research and monitoring needs to further help in conservation of American ginseng" (PP. 56). These recommendations include calls for increased monitoring of ginseng populations, programs for seed collections of ginseng, further research on harvesting, the impact of deer grazing on ginseng populations. Two of the recommendations are particularly aligned with a tragedy of the commons perspective. In the first, Kauffman calls for increased regulation of ginseng harvesting. Kauffman writes that:

State ginseng certification programs do not consistently track ginseng transactions to aid in apprehension of ginseng poachers. Two states, Wisconsin and Maryland, require all harvesters to obtain a license. Ohio is currently trying to pass this change through their state legislature. Other

states, such as Tennessee, require all harvesters to sign their name with identification when they sell to certified dealers. Finally some states, such as North Carolina, only require a harvester to state their name when they sell their roots to the dealer. The later system makes it impossible to track the chain of custody for ginseng roots. (2006:57)

This is essentially a call for increased and more effective execution of already existing policies so that more poachers will be apprehended. This suggestion is in line with the tragedy of the commons framework because it calls for increased use and enforcement of coercive policies. It sees those policies as failing because they are not consistent enough in punishing those who act outside of the regulations. The second policy aligning with a tragedy of the commons framework reads:

Establish ginseng preserves where ginseng is prohibited and initiate a marking program to aid law enforcement officials in apprehending illegal harvesters. The success of these areas as reserves will depend entirely on enforcement, since the larger, protected ginseng populations will continue to lure collectors. It will be critical to educate law enforcement officials, state ginseng inspectors, members of the judicial system, dealers, and the public to ensure the success of the program. (2006:58)

This suggestion is an exaggerated and preservationist version of already existing conservationist policies. A successful version of this suggestion would literally exclude all harvesters from accessing the plants and better punish harvesters through the implementation of new programs. As Kauffman states, the success of the program relies on the consistent implementation of policies that regulate harvesters and again is a call for increased law enforcement around ginseng. Both of these suggestions are simply calls for poachers, who are likely to be working for their subsistence, to be more consistently punished.

Tragedy of the Commodity

In *The Tragedy of the Commodity: Oceans, Fisheries, and Aquaculture* (2015), Stefano B. Longo, Rebecca Clausen, and Brett Clark suggest replacing the use of the tragedy of the commons with the theory developed in their book, tragedy of the commodity. Their main critique of the tragedy of the commons is that it fails to address the influence of historical conditions and the socioeconomic system on individuals' use of resources. Alternatively, Longo and colleagues recognize capitalism's influence on individual use of resources and, as a result, on the greater human ecological metabolism. Based in Marxist theory, they argue that capitalism is a socio-economic system oriented towards accumulation of capital and that this accumulation is met through endless commodification. They argue that these dynamics shape human-ecological metabolism and result in ecological rifts. This is especially true when natural processes and subsistence materials are commodified. These items are categorized as "fictitious commodities" or items that were "not produced to sell on a market" (Longo et al. 2015:33). These fictitious commodities, such as plants and animals, have cycles of reproduction and regeneration, which are not in accordance with the ever-increasing capitalist rates of accumulation. When these items are commodified, capitalists attempt to manipulate their natural cycles into the "economic cycle of exchange" (Longo et al. 2015:33). This manipulation of natural cycles results in ecological imbalances that lead to rifts in the metabolic exchange between humans and their environment. In their book, Longo et al. apply this theory to fisheries. In this thesis, I will apply it to American ginseng.

Historical Analysis

In order to demonstrate the relevance of the tragedy of the commodity to the depletion of American ginseng, I will recount a history of the commodification of American ginseng. Through this recounting, I will describe how the plant was first commodified showing that European colonizers commodified the plant specifically for its exchange value. They repeatedly showed more interest in its exchange value than its use value and, as a result, had far more interest in emphasizing the similarities between American and Asian ginseng in order to make American ginseng a more attractive commodity. This demonstrates that the issue of American ginseng's scarcity fits better in the theory of the tragedy of the commodity rather than the tragedy of the commons by placing the phenomenon of depletion within its explicit history of commodification. I will also show how the commodification of American ginseng and the associated trade created a metabolic rift, which subsequently depleted the plant's populations wherever the trades were centered. This will demonstrate the herb's compatibility with the theory of the tragedy of the commodity by demonstrating how the depletion of the herb, a fictitious commodity, is the result of a metabolic rift resulting from the mismatch between economic cycles of production and ginseng's cycles of reproduction. Finally, I will describe the social relations and rifts created with the ginseng trade. This includes exploitation of labor and expropriation of knowledge, which are both consistent with processes of commodification and social metabolic rifts.

European Introduction to Ginseng

Asian Ginseng (*Panax ginseng*) has been used in China for thousands of years. The first written mention of the herb was in 2650 B.C., but it is assumed that it has been used for much

longer than that (Appleby 1983). During that time, both the popularity and scarcity of ginseng were increasing. By the 15th century, ginseng was very scarce in parts of China south of the Great Wall. It only existed in prevalence in a northern region called Manchuria (Evans 1985). Michael Block (2006) wrote that Ginseng became a particularly well-regarded medicine among the Chinese around the same time Europeans were expanding their presence in China and North America likely putting increased pressures on ginseng populations. By the end of the 17th century, wild ginseng populations had become scarce in Manchuria and increasingly dwindled into the 18th century.

Europeans were first introduced to ginseng (*Panax ginseng*) when the Japanese traded the herb with the Dutch in the early 17th century (Parsons 2016, Appleby 1983, and Evans 1985). Despite having had access to ginseng, Europeans did not have much knowledge of the plant. Up to this point, they had only ever received a dried root in shipments from Asia. Any aerial parts left in the shipments would have been shriveled and unrecognizable. This changed in 1713 when a Jesuit named Pierre Jartoux sent a letter containing the first botanical description of the plant that was accessible to Europeans (Parsons 2016). In this description, Jartoux included a sketch of the plant and described its habitat, geographical location, and a method of preparation (Appleby 1983). He wrote that if ginseng were to be found anywhere else in the world, it may also exist in New France, which is an undefined area roughly covering what is currently referred to as Quebec and the Great Lakes regions (Parsons 2016), as he had heard that there were similar forests and that it was at a similar latitude as the Tartarie region where he had learned of the plant (Parsons 2016). Both the French Académie Royale des Sciences and Royal Society in the Philosophical Transactions published Jartoux's letter and therefore quickly spreading this information (Parsons 2016, Appleby 1983).

The letter prompted a search for the plant in New France and New England (Parsons 2016). One of those searchers was a French Jesuit named Joseph-François Lafitau. Lafitau had been living at Kahnawake, a catholic mission in the St. Lawrence Valley (Parsons 2016). The St. Lawrence Valley had multiple villages where members of Haudenosaunee who had converted to Catholicism resided (Parmenter 2007). Carrying with him a verbal description of the plant, Lafitau had asked Mohawk women for assistance in searching for ginseng in New France. In 1717⁹, Lafitau reported having found ginseng in North America (Parsons 2016). This ‘discovery’ of American ginseng demonstrates that European interest in the plant was based in a desire to find another source of the widely used Asian ginseng more than it was an interest in this new plant for itself. This interest in finding a plant comparable to Asian Ginseng quickly became a commercial endeavor and evidence that this American plant was comparable to Asian Ginseng were necessary to its process of commodification.

Lafitau’s own interest was at least in part, as Parsons in documented “The Natural History of Colonial Science: Joseph-François Lafitau’s Discovery of Ginseng and Its Afterlives” (2016), towards commodification. Using evidence from Lafitau’s 1718 *Mémoire* in which Lafitau discussed American ginseng, Parsons writes that Lafitau argued that American ginseng could replace ginseng roots sent to France from China (2016). Lafitau argued that, “transporting roots all the way from China allowed them “to ferment considerably, & by consequence lose much of their volatile salts” (Parsons 2016: Canada, Lafitau hoped, could be a source of roots “fresher and better conditioned”” (2016:59-60). Lafitau also hoped to expand consumption of ginseng in France arguing that ginseng was too expensive for common people in France because it was considered a “sovereign remedy” and a “universal panacea” (Parsons 2016:60). Parsons writes that Lafitau was interested in increasing commerce between the Indians and the French,

⁹ Some accounts say Lafitau found ginseng in 1716 and others say 1717

arguing that it would enrich both peoples and cultures. Through these writings, it is clear that Lafitau contributed to the commodification of American ginseng by seeking to expand the consumption of the plant.

This interest in exchange value is again demonstrated by Lafitau's inclusion of a discussion of the price of ginseng in China in his *Mémoire* which Parsons argued was used to convey the value of the plant to the readers. Through Lafitau's discussion of prices, Parsons also states that Lafitau believed that American Ginseng could be sold for the same prices in China and that he continued to minimize the plants' differences (2016). He further aids the development of a trade by providing what Parsons described as a "virtual how-to guide for would-be aboriginal and Euro-American ginseng traders" (2016:63), which included language necessary to communicate with indigenous communities in North America to employ them to find the plant for traders. Regardless of Lafitau's intentions, the effects of these suggestions lead to the increasing commodification of American ginseng. Lafitau's desire to increase trade of American ginseng and discussion of potential prices of the plant only recognized American ginseng for its potential exchange value. By focusing on its exchange value, Lafitau and subsequent authors failed to consider the plant's ecological reality. Such an expansion of trade would have, and did, create a metabolic rift. The speed and expansion of trade required a rate of harvest which exceeded ginseng's cycles of reproduction therefore leading to its depletion. Not only does this writing demonstrate that attempts to find American ginseng were explicitly wrapped up in attempts to commodify the plant, but it demonstrates that the interest in the plant lied primarily in its exchange value and ignored its ecology.

The writers citing Lafitau demonstrated far more interest in Lafitau's discussion of potential exchange value of American ginseng, ginseng's use and value in China, and potential

commercial opportunities than they did in the discussion of existing uses and knowledge of the plant by Native Americans (Parsons 2016). In showing that these texts largely ignored existing context for the plant and instead focused primarily on the prices Lafitau listed for the plant and the Chinese context for the plant, Parsons again demonstrates the interest in ginseng focused more on exchange value and therefore on its commodification. Regardless of their intentions, it is clear that the information the Jesuits Lafitau and Jartoux made accessible was used for commercial endeavor.

Creating a Commodity

Necessary to the commodification of American ginseng was proof that it was identical to or at least indistinguishable from Asian ginseng. Those attempting to commodify the plant originally hoped to replace the ginseng trade between Europe and Asia with the ginseng trade between Europe and North American (Block 2006). Therefore, demonstrating the two plants similarity was necessary to the project of commodification. When attempts at trade in France and England failed (Block 2006), trade moved to China. When trading ginseng in China, French and English traders falsely represented American ginseng as Asian ginseng (Parsons 2016, Appleby 1983, Evans 1985). This demonstrates how important the similarity of the two plants was to American ginseng's commodification. Peter Collinson, a Quaker botanist who sent roots to China through the British East India Company, wrote about this deceit in 1964 and argued that the first ginseng crash was caused when the deceit was found out. Collinson wrote, "the market in China glutted with this [American ginseng] root, which had been artfully concealed and prepared by the Chinese, and sold under secrecy to the great people for true Chinese Ginseng, but its great plenty soon discovered the cheat, and then it sank to nothing" (Appleby 1983:137).

Ironically, Evans wrote that the same French and English who had rejected American ginseng in preference for what they considered to be the more exotic commodity (Block 2006) may have bought American ginseng that had been misrepresented as Asian ginseng from Asian traders.

With this perspective, the many attempts to demonstrate similarity and erase difference between Asian and American ginseng become more explicitly part of the process of American ginseng's commodification. These attempts include the naming of the plant and the consideration, or lack thereof, of the consideration of uses of the plant. In each of these processes, the already existing names, uses, and relationships that indigenous American groups had with American ginseng were ignored in preference to focusing on uses, contexts, and names that emphasized the similarity between this American plant and Asian ginseng.

This erasure is most apparent in the naming of the plant. Lafitau's initial report shared the Haudenosaunee name, "garentogen" (Parsons 2016:44). Block (2006) also wrote about many other Native American names for American ginseng likely existed before Lafitau learned about the plant. These included the Fox name "wena'ni" (2006:167), the Menomoni name "mätcxetasa" (2006:167), two possible Anishinabe names including "jïssê'ns" (2006:168) and "Shtě'-na-bi-o'-dzhi-bik" (2006:169), and the Cherokee's two names for the plant "â'talĭ-gŭlĭ" and "Yũñwĭ, Usdi'" (2006:171). The fact that the plant was, and is, called ginseng despite Lafitau's initial report that included an already existing names echoes the erasure of indigenous use and knowledge of the plant. By calling the plant ginseng, they emphasized the similarity of Asian and American ginseng in order to demonstrate its ability to be commodified while obfuscating the differences rooted in the human cultures surrounding the plants.

Similarly, the medicinal properties and uses of ginseng that the French and English highlighted also demonstrated obfuscation of difference. This is revealed first through Lafitau's

own interest in the plant's properties. Upon finding the plant, Lafitau consulted the Mohawk woman who had guided him to it and wrote that, "she recognized it at once for one of their ordinary remedies, and told me the types of usage that the Sauvages had for it" (Parsons 2016:51). Lafitau learned from others that the plant was commonly used as a purgative by other nearby indigenous groups and to treat dysentery by Wendat and Abenaki informants (Parsons 2016). Lafitau, however, was more interested in whether the plant he had found was comparable Asian ginseng than he was in the existing, Native American uses of the plant. To demonstrate that the two plants had the same medicinal properties, Lafitau tested the plant on himself and the Native Americans he lived with (Parsons 2016). For example, Parsons (2016) writes that Lafitau encouraged the Mohawk to use the plant to treat an intermittent fever, which was an established practice with Asian ginseng, but not an established practice among the Mohawk or any other indigenous groups that Lafitau was aware of. Lafitau's tests of the properties of American ginseng were tests of the plants exchange value more than they were tests of their use value¹⁰ as the measure of similarity between American and Asian ginseng served as a measure of the extent to which American ginseng could be commodified. Similarly, Lafitau's focus on elucidating similarities between American and Asian ginseng rather than furthering his understanding of American ginseng's already existing context in Native American communities.

The erasure of indigenous Americans involvement and difference in use around ginseng that Lafitau begins through these tests is cemented by subsequent ginseng authors who Parsons (2016) wrote focused on the Chinese context of ginseng and largely ignored the Native American context. Specifically Parsons claimed that, "While it is not possible to trace out the readership of Lafitau's *Mémoire*, we can note an instrumentalization and marginalization of indigenous knowledge in its wake. As collectors, merchants, and travelers expanded the known range of

American ginseng in the decades after the *Mémoire*'s publication, indigenous knowledge and informants were relegated to increasingly minor roles in their texts" (2016:64). This lack of inclusion of indigenous knowledge in texts occurred despite evidence of widespread use amongst indigenous American groups. Block writes that "the use of ginseng as a medicine among Native American groups seems to have been as widespread as ginseng's natural range" (2006:163) and disputes suggest that knowledge of ginseng use by American Indians may have originated from European traders¹¹. Despite the lack of extensive use by the Haudenosaunee of the plant, Block reports evidence that many other indigenous groups used the plant and that there is evidence that some, like the Cherokee, valued the plant highly. By focusing on the similarity in medicinal properties elucidated by Lafitau and largely ignoring the many already existing medicinal uses of American ginseng by Native American groups, Lafitau and subsequent authors worked to erase the difference between the two plants, squandering its potential use-value in favor of commodification.

Evidence of this erasure can be seen in the little information currently available on the use, extent of use, or prevalence of American ginseng prior to European occupation of North America. Block writes that "the ethnographic data on ginseng use is incomplete in the published anthropological literature" (2006:162) and argues that this lack of documentation is more a reflection of lack of anthropological interest than it is a reflection of the lack of use or abundance of ginseng. Kauffman writes that there is "little information on the historical abundance of American ginseng" (2006:15).

¹¹ For this complete discussion, see Block 2006 pages 162-177.

Ecological Rifts and Ginseng Depletion

As early as the first half of the 18th century, there were reports of ginseng's scarcity. Ginseng, being a plant and therefore a fictitious commodity, fits well into the pattern outlined by Long and co-authors in the tragedy of the commodity. As a plant, ginseng has natural cycles of regeneration. Conservation scholars (primarily ecologists) have demonstrated that this cycle of reproduction happens after ginseng plants produce fruit and seeds which can take as long as 5 years into a plant's life (McGraw et al. 2013). These cycles of regeneration are much slower than economic cycles of reproduction therefore implying that a metabolic rift would easily be created from the commodification of American ginseng. Looking at evidence from the 18th and 19th centuries of the ginseng trade, it becomes clear that a metabolic rift leading to the depletion of ginseng populations quickly formed. This is demonstrated both through reports which repeatedly suggest increasing scarcity of ginseng in the areas where the plant is commodified and through reports of botanists and other key figures specifically expressing concern that ginseng would become extinct because the roots were harvested before seeds and fruits on the plant formed.

The initial ginseng trade centered around Montreal and Albany, New York (Parsons 2016). Some of the earliest reports of ginseng's scarcity were recounted by Parsons (2016) when he wrote that both Lafitau in New France and William Byrd in Virginia had noted ginseng's scarcity. Reporting estimates of the numbers of plants collected in the first half of the 18th century, Parsons writes "by 1744, we can estimate that between 171,600 and 300,300 plants were being collected to supply the legal trade to La Rochelle. By 1751 the number of plants collected had increased tenfold (1,859,000–3,253,250), before increasing more than another fourfold when the trade reached its pinnacle in 1752 (7,607,600–13,313,300)" (2016:68). The harvest during

this time was coming from a geographically small area and from a plant who both Lafitau and Byrd had already described as rare and as appearing sparingly (Parsons 2016). Parsons therefore also concluded that this level of harvest must have created immense pressure on ginseng populations in the area. Evans (1985) confirms that the high levels of harvest in small geographic areas seems to exhaust ginseng populations when writing about the late 1740s “there was now no ginseng left around Montreal and the Indians were ‘obliged to go far within the English boundaries to collect’ roots” (P. 13). Lafitau, likewise, expressed concern that “the plant will soon be destroyed near the French habitations, & it will be necessary to travel still further into the woods to search for it, which will make it rare & very valuable” (Parsons 2016:68). Most indicative of the creation of a metabolic rift, Peter Kalm, a botanist and student of Carl Linnaeus who traveled North American, expressed concern about ginseng harvests writing “in a few years it may become extinct in America, because quantities are taken out by the roots before the seeds have ripened” (Block 2006:135). Kalm’s comment suggests that the pressure to harvest coming from interest in the potential exchange value of the plant created a market that ignored American ginseng’s necessary cycles of regeneration leading to the plant’s depletion and, as Kalm feared, potential extinction.

Reports such as these continue into the next ginseng boom in the 1780s. Rather than the more generalized accounts of scarcity reported above, the accounts of scarcity are more specific. These reports show that, in places where harvesters seemed to have had ready access to ginseng, they either found none or had to travel much farther in order to find it. For example, around 1786, in attempting to get ginseng for experiments for Sir Joseph Banks, President of the Royal Society of London for Improving Natural Knowledge, Humphrey Marshall reports that his nephew, a botanist, “had travelled about 200 miles west of Chester County through mountains,

‘as the Ginseng is either dug up for sale or rooted up by the hogs so much, that it begins to grow scarce in the inhabited parts’ (Appleby 1983: 141). Block similarly reports the account of Moravian missionaries and converts who reported that “by the end of the summer of 1789, a party of Zeisberger’s Moravians seeking ginseng traveled as far from New Salem as a place called Tschinque (possibly the Chagrin River near Cleveland, more than fifty miles away)²⁶³ but “had gone about in vain” and “returned home empty handed.²⁶⁴” (2006:276-277). Both of these sets of accounts suggest that in the areas where ginseng was commodified, first in Montreal and New France and after in Northern New England Colonies, it had become so scarce that collectors had to travel very far in order find more of the plant.

Just as there were reports of decline in ginseng populations during the first two ginseng booms, Manget wrote about similar accounts in the late 19th and early 20th centuries about the third ginseng boom in post-civil war in Appalachia. Most significantly, Manget writes that someone with extensive experience in the ginseng trade, Arthur Robert Harding, wrote in 1908 “Just what the collection of Ginseng in that territory is now I am unable to say as I have not traveled the territory since 1900, but from what the dealers and others say I am inclined to think the collection is only about 10% what it was in the early 90s. This shows to what a remarkable extent the wild root has decreased” (Manget 2013:55). Just as there was evidence of significant depletion in the areas of New France and New England that the first two ginseng booms were centered, there was, and is, evidence of significant depletion after the third ginseng boom.

Social Rifts in the Ginseng Trade

Concurrent with processes of commodification and development of ecological metabolic rifts are the development of associated social rifts. Nathan McClintock (2010) described social

rifts as the commodification of land and the commodification of labour. The social rifts associated with the ginseng trade is the rise of exploited labor in conjunction with the trade and the expropriation of knowledge.

During the very early trade, ginseng was collected in Montreal and exported to China via the Compagnie des Indes Occidentales (Parsons 2016 and Carlson 1986). This trade was expected to help supplement income for the residents of Kahnawake as the fur trade slowed with fewer fur-bearing animals in the area and with the westward expansion of the fur trade (Parsons 2016). More generally, as the fur trade was moving away from Haudenosaunee territory, ginseng trading began increasing (Block 2006). It seems there was a close connection between the fur trade and ginseng trade as many fur traders sought ginseng from the same indigenous groups they originally traded for fur (Carlson 1986, Block 2006). Indigenous groups were compensated with European goods including blankets and most notably liquor (Parsons 2016).

In the beginning of the ginseng trade, indigenous groups in New France supplied colonial merchants with ginseng. Block summarizes this when writing “Native Americans played a vital role in the earliest American ginseng trade...As would happen later with other parts of the China Trade, the Native American role shifted from one of prominence early on to one of near invisibility later” (2006:65).

The veracity of this trade seemed to both take up a significant amount of time and labor of indigenous groups involved in the trade. Parsons wrote of the account of Moravian minister, J. Martin Mack who in 1752 reported that Iroquois “villages [were] virtually abandoned as men, women, and children scoured the woods for the root” (2016:67). It also seems that ginseng traders traded French and English goods with the primarily Haudenosaunee gatherers of ginseng. Missionaries and administrators complained of the excess consumption of and access to liquor,

which they claimed was detrimental to indigenous communities (Parsons 2016). Lafitau himself has expressed concern over Indian debts to French traders due to Brandy (“and other similar liquors”) and, along with other Jesuit requests, sought to ban the trade of alcohol (Block 2006:76). Additionally, Peter Kalm reported that since the season for ginseng harvest overlapped with farm harvests, farmers who depended on Native American labor were unable to do so because usual laborers were instead looking for ginseng (Parsons 2016, Block 2006). This is echoed when John Newkirk, a British trader, expressed concern over the potential rise in ginseng trade in between the 1750 and 1780 boom. He wrote, “the Indians will mind then nothing but gathering of that root” (Block 2006:184). These accounts, if nothing else, demonstrate the prevalence of involvement in this trade. Block (2016) also tells accounts that demonstrate the value of the ginseng trade to American Indians. For example, during peace negotiations in 1766 to end Pontiac Rebellion, Block rights “the Onondga chief Deiquande asked that “the Frenchmen now trading . . . for Ginsang” would be allowed to move freely through the region around Oneida Lake in New York” (2006:184). This was all despite Kalm’s claim that “the Indians are frequently cheated in disposing of their goods” (Block 2006:133).

Conclusion

There are a multitude of people and organizations concerned with the depletion of ginseng. Policies around this include state and federal governments and land management agencies which regulate harvesting and trade, private property owners who are able to manage their property as they see fit, and organizations, often run by business-running herbalists, such as the American Herbalist Association and United Plant Savers, that work to implement policies and often start “sanctuaries” where they can ban harvesting from areas completely. Many of the implemented policies, which focus largely on harvest and trade practices, use a tragedy of the commons framework to understand ginseng scarcity and in choosing policies to implement. By treating the issue of ginseng scarcity as a tragedy of the commons, as many scholars of ginseng conservation also do, they risk doing more to control harvesters than actually limiting the amount of ginseng harvested or traded. Policies focused on controlling harvesters function to criminalize harvesters working for subsistence, primarily during times of economic need, and therefore putting the consequences of ginseng commodification primarily on exploited laborers rather than those businesses and traders who earn the most from the trade.

Dorceta Taylor, in their book *The Rise of the Conservation Movement* (2016), demonstrates that policies limiting hunting or harvesting of wildlife have occurred since the beginnings of conservation movements in the late 19th and early 20th century. Taylor documents the ways that subsistence hunters, Italian immigrants, Blacks, Native Americans, and children were blamed for destroying wildlife and in turn shows the patterns of increased criminalization of these groups when preservations or private game hunting reserves clashed with those hunting for subsistence rather than recreational purposes. Like the game laws Taylor

describes, ginseng policies rarely extend to private property making opportunity for those owning private property to make a profit off resources non-property owners do not have the same access to. Ultimately, Taylor demonstrates that limiting access to resources has been a theme since the beginning of the conservation movement and that conservation policies that are put in place are usually aimed at continuing the supply of resources for business people to be able to profit off of more than they are at providing resources for a public or environment that survives because of them. Conversely, Taylor also demonstrates that preservationist policies, which are commonly be associated with the creation and implementation of national parks or wilderness areas are analogous to ginseng policies. Specifically, “sanctuaries” that ban harvests from private properties also tend to do harm by excluding people from land they used and lived in often for subsistence purposes. She also points to that preservationist policies also only tend to be implemented when those with power stand to gain economically. In recognizing that current ginseng policies follow the patterns of environmental policies outlined by Taylor (2016), I contend that these policies tend to give more power to those already in power and further marginalize the marginalized. It is important to be weary of continuing to implement these policies and to do more work to situate the frameworks used to understand environmental tragedy and the policies suggested to solve them in the histories they risk repeating.

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