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Between Medicine and Gift

How Anticorruption, E-Commerce, and Biotechnology Fostered the Emergence of “Fresh Cordyceps” in Sino-Tibetan Trade

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Abstract

Tibet's wild fungus cordyceps (*Ophiocordyceps sinensis*), a prized commodity in metropolitan China, has been undergoing changes in the way it is traded and marketed in Tibet. Prized as a medicinal tonic and high-value gift, the parasitic fungus has traditionally been traded in its dried form. However, in recent years we have observed the emergence of trade in fresh cordyceps. This paper seeks to make sense of this change in the form of this commodity and its correlation to changing meanings of cordyceps in China. Based on ethnographic fieldwork in Tibet and textual analysis of online markets in China, this paper argues that this transformation is associated with China's anticorruption campaigns, the rising importance of e-commerce infrastructures, and the biomedicalization of cordyceps through advancing biotechnologies. In addition, we argue that professional brokers play a key role in the emergence of the fresh cordyceps trade.

Keywords

medicinal mushrooms – cordyceps – *Ophiocordyceps sinensis* – corruption – medicalization – e-commerce – China

Introduction

Ophiocordyceps sinensis (henceforth cordyceps), a wild medicinal fungus endemic to the Himalayan highlands and resistant to domestication, has become a critical economic factor in places where it grows. Since the beginning of cordyceps's circulation in China in the eighteenth century it has been traded in its dried form, which gained fame at the turn of the last century for fetching prices higher than gold.¹ In its dried form, cordyceps was packaged in luxury gift boxes and was in high demand across China. As this paper shows, the gift economy of dried cordyceps has impacted livelihoods and ecology in the Tibetan Plateau. In recent years, however, this high-value commodity has taken on a new quality: freshness. First observed in Shangri-La, Yunnan Province, in 2016, traders are increasingly selling fresh cordyceps specimens, in addition to the dried varieties used for centuries. Our paper is concerned with the emergence of fresh cordyceps and a return of cordyceps's valuation as medicine.

This paper seeks to make sense of the emergence of fresh cordyceps as a commodity, based on ethnographic fieldwork with foragers, traders, and brokers in Tibet and textual analysis of online markets. As Susanne Friedberg shows, the emergence of the modern idea of freshness in food is linked to the prestige of consuming perishable goods. Modern freshness masks “all the history, technology, and human handling that deliver it to our plates.”² The marketing of fresh cordyceps resonates with the idea that freshness summons with notions of progress and urban moralities of consuming healthy, nutritious, pure, and natural foods as an “antidote to the ills that progress brings,” while reminding us that “freshness means different things in different foods.”³ This article foregrounds the specific political, economic, and infrastructural changes that contribute to the emergence of trading in fresh cordyceps in postreform China. We argue that fresh cordyceps is associated with China's

1 Lu 2017, 14–15; Hopping, Chignell, and Lambin 2018, 2.

2 Friedberg 2009, 17.

3 Ibid., 3–4.

anticorruption campaigns, the rising importance of e-commerce infrastructures, and the biomedicalization of cordyceps through advancing biotechnologies. Selling fresh cordyceps is a way for brokers in Tibet to cope with the loss of consumers from the Chinese government sector by tapping into a new consumer base that is price-conscious and interested in consuming cordyceps for its medicinal qualities. Simultaneously, the marketing strategies of wild cordyceps are supported by biomedicalized understandings of the fungus and urban appetites for a medicine from the pure, not-yet-polluted Himalayas.

The shift from dry to fresh cordyceps marks a shift from gift giving to the consumption of cordyceps primarily for health reasons brought about at various points in the value chain stretching from the highlands of Tibet to the urban centers of China. We argue in particular for attention to the role of professional brokers and their logistic contribution to the emergence of the fresh cordyceps trade complex and in negotiating the tastes, understandings, and needs between producers and urban consumers. Extending beyond a focus on either the collection or consumption of cordyceps to its circulation, this article shows how cordyceps provides economic opportunities for various individuals and groups who are structurally disadvantaged in society. We present traders and brokers, often of ethnic minority background, as engines of change and transformation, whose livelihoods depend on their judgment and prediction of the market and their ability to cater to the latest market demands by inventing new concepts and products.

This research incorporates a two-month ethnographic study in Shangri-La, Diqing Tibetan Autonomous Prefecture in northwest Yunnan Province, China, carried out by Siran Liang in the summer of 2018. In contrast to many studies conducted in cordyceps's core production areas, this study was based in a region at the periphery of cordyceps collection, yet at the center of economic and infrastructural developments since the turn of the twenty-first century. A booming tourism industry has connected the region, known for its high biological and ethnic diversity, to metropolitan China. Shangri-La airport has become a major hub of domestic tourism and trade in cordyceps and matsutake mushrooms. Despite its comparatively low cordyceps production, Shangri-La provides a unique case to study how the cordyceps business has transformed in cultural, infrastructural, and economic proximity to metropolitan China. Access to the field was facilitated by personal connections established in 2012–2013, when Siran Liang volunteered in Shangri-La as a primary school teacher. For this study, she collected ethnographic data through participant observation and informal interviews among people involved in foraging, transporting, and trading fungus. This involved a one-week stay on the summer pasture of

a village we call Nyima and the following of foragers on their regular foraging trips to the cordyceps-producing mountains.⁴ These ethnographic findings provide us with a picture of the starting point of the cordyceps commodity chain and with insights into livelihoods complemented by fungus foraging. The ethnographic investigation then followed the cordyceps trade down the high mountains to the market town of Shangri-La. In participant observation with cordyceps brokers and wholesalers, which included helping to clean the caterpillar fungus, observations, and informal interviews at the marketplace, the study shifted toward urban livelihoods and recent transformations of the cordyceps economy.

In this article, we first describe the foraging and trading activities in the mountains of Tibet. We then turn to the rise of fresh cordyceps on markets in China and show how it indicates a transformation back from gift to medicine.

From Medicine to Gift: Alternative Highland Livelihoods Enabled by Cordyceps

When spring arrives at the Tibetan Plateau, men and women of lower-lying villages, like the village of Nyima in Shangri-La, move to their summer pastures. They do so not primarily for herding but to participate in the lucrative hunt for *Ophiocordyceps sinensis*. Tibetans themselves use cordyceps rarely and only to improve eyesight. Tibetan medicine first documented the medicinal property of cordyceps, emphasizing its aphrodisiacal qualities. As the Tibetan medical record regarding cordyceps is scarce, scholars suggest that cordyceps was not commonly used in Tibet.⁵ Since the eighteenth century, cordyceps has been integrated into classic Chinese medical literature and endowed with near-magical properties and efficacy. A popular way to prepare cordyceps is to first cook the whole caterpillar fungus in chicken or duck soup, then ingest the fungus and soup together. Only the combined form of fungus and caterpillar is considered efficacious.

From May to the end of June, the fruiting bodies of *Ophiocordyceps sinensis* fungus emerge among the highland grasses. In its wild form, cordyceps is the result of a parasitic symbiosis between the fungus and its host, the soil-living larvae of a genus of Himalayan moths called *Hepialus/Thitarodes* (Figure 1).⁶

4 All place names below the level of county and all names of persons in this article are pseudonyms.

5 Lu 2017, 11.

6 Holliday 2017, 59–66.

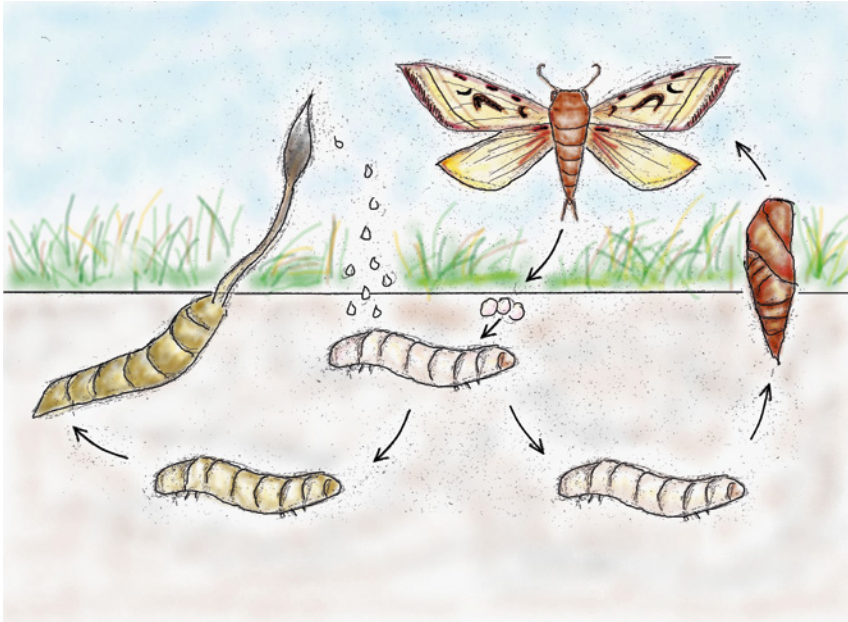


FIGURE 1 The life cycle of cordyceps
DRAWING: KSENIA DENISOVA, 2020

Prior to killing its host, the fungus “directs” the larvae toward the open air to a point where just the tip of its head is exposed. From that location, the Ascomycota fungus grows its fruiting body out of the dead larvae’s head, ultimately replacing the larvae’s flesh entirely with mycelium and its metabolites. This fruiting body is the “summer grass” Tibetan pastoralists are looking out for when foraging – what they call *yartsa gunbu*. Tenzin, a Tibetan woman in her midthirties, is one such forager looking for mummified larvae. Like other users of her summer pastures, her livelihood includes farming in the village, herding her families’ yaks, and foraging for high-value fungi. In the following pages, we follow the journey of cordyceps as a gift commodity, beginning with the first human contact through foragers like Tenzin, and continuing with couriers, traders, and brokers in the fungus’s way to metropolitan China.

Cordyceps Foraging: A Fun Economic Activity

In 2018 Liang lived for one week with Tenzin in her family’s one-room hut located in her village’s yak pasture, a two-hour motorbike ride down the mountain road. After a breakfast of *tsampa* (roasted barley flour) and butter tea, Liang would join Tenzin on group hikes from the camp to the higher cordyceps mountains, a steep two-hour hike. On a typical foraging trip, some ten to

twelve villagers of all ages would hike up to the village's cordyceps mountains together, where they split up to spend the day cordyceps picking. Foragers hike and crawl on the mountain slopes while simultaneously scanning the shrubland vegetation carefully (Figure 2). The fruiting bodies usually project two to three centimeters above the soil and are difficult to distinguish from the surrounding vegetation (Figure 3). For Liang it was like looking for a needle in a haystack. Sometimes, merciless wind with icy sleet made foraging on the mountain slopes harder, almost enough to make Liang forget that it was summertime. When Tenzin spotted a cordyceps, she scooped the soil around the fruiting body with her finger, gently pulling the entire caterpillar fungus out. She patted down the soil and carefully placed the fresh cordyceps, still covered with mud, in a plastic chewing gum box.

The collected cordyceps began their journey in Tenzin's chewing gum box, but by the time they reached the high-end pharmaceutical stores in the shopping malls and airports, they were ornately presented in golden silk cloth in luxurious wooden boxes. On this journey, they would have passed through many pairs of hands and preparatory processes. Their consumers were predominantly Han Chinese living in China's metropolitan centers.⁷ Its price skyrocketed only after China's economic liberalization in the early 1980s. A senior Tibetan told Liang that before the rising market demand for cordyceps, he used to eat a wok of the fungus for dinner if there was no other food option. This is testimony to the fact that cordyceps was not highly valued. In June 2018 cordyceps of average quality were sold for \$50,000 per kg in Shanghai. The current high market value of cordyceps cannot be explained by its medicinal properties alone. Cordyceps's value also comes from the global imagination of Tibet as a land of purity, tradition, and nostalgia.⁸ Most importantly, cordyceps has transformed from a medicine to a symbol of status and a high-end gift commodity.⁹ As a result of the transformation, cordyceps has mostly been used since the turn of the twenty-first century as a medicinal symbol and luxury commodity for gifting and networking (known as *guanxi* 关系 in Chinese) among businessmen and government officials.

Several studies report the tremendous impact of the rise of the cordyceps trade on local livelihoods, lifestyles, and economy across its production area.¹⁰ For example, mycologist Daniel Winkler estimates that in the core production regions, like Chamdo and Naqu, cordyceps provides 70 to 90 percent of the

7 Winkler 2009, 294.

8 Liang 2012, 56–63; Yeh and Lama 2013, 318–40.

9 Yeh and Lama 2013, 318–40.

10 Lama 2007, 103–9; Linke 2017, 63–82; Luorongzhandui, Gruschke, and Breuer 2017, 83–94; Winkler 2017, 45–62; Sulek 2011, 9–22.



FIGURE 2 Two women searching for cordyceps
PHOTO: S. LIANG, 2018



FIGURE 3 A cordyceps fruiting body projecting above the soil
PHOTO: S. LIANG, 2018

yearly household income.¹¹ In some regions, the cordyceps economy creates scenes of “crowded mountains” and “empty towns,” with almost the entire working population busy foraging.¹² Especially from May to June, during the two-month foraging season, the high-value commodity attracts local people to the “cordyceps mountains” (*chongcao shan* 虫草山) with the prospect of earning fast money.

Tenzin and others in her group described the foraging trips most of all in terms of “fun,” “autonomy,” and the prospect of making money. As a teenage boy put it: “There is nothing to do at home, so I came up to the cordyceps mountains to have fun.”¹³ This boy often told jokes about his mother, which always made his mother and the rest of the group laugh. The foraging activity was frequently accompanied by laughter. For Tibetans with little formal education, searching for cordyceps offers a greater sense of autonomy than working in construction or other minimum wage jobs. They decide for themselves whether or not to forage. During the foraging, they can have a rest or even take a nap whenever and wherever they want. For example, Brendan Galipeau observes that cordyceps foraging, embedded within community interactions and self-instruction, provides an “escape” for the villagers working as alienated capitalist labor for a French wine company in Shangri-La, even though the contract labor generates more income.¹⁴ Cordyceps foraging parallels Tsing’s matsutake foragers in the US and Münster’s ginger growers in India, who are usually considered marginalized in the societies discussed and prefer the “freedom” or proud autonomy of their livelihoods.¹⁵ Cordyceps foraging is thus not just an economic but also a social activity that allows villagers to spend time together. It becomes particularly attractive when capitalist forms of work are increasingly encroaching onto the highlands.

Moreover, Michelle Olsgard Stewart points out the ways in which northwest Yunnan Tibetan cordyceps foragers express their affinity for the high alpine grasslands. She suggests that their participation in the fungal economy of cordyceps foraging produces and maintains their identities as Tibetans who intimately relate to their surrounding mountains.¹⁶ Sonam, a fifty-year-old Nyima herder, no longer participates in cordyceps foraging due to health issues. He takes care of the housework and looks after his grandson and the dzos (a hybrid of a yak and a cow) at the summer pasture, while his daughter-in-law

11 Winkler 2009, 291–316.

12 Lama 2007, 103.

13 Unless otherwise stated, all translations are Siran Liang’s.

14 Galipeau 2020, 1–17.

15 Münster 2015, 107–8; Tsing 2015, 61–70.

16 Stewart 2014, 171–72.

is busy looking for cordyceps. Sonam comes to the mountain every summer, although material life is much better back in the village. As he put it,

I like to live in the mountains. Whenever it is getting warm, I come to the mountains. It is better than staying in the village. I feel free here. It is more comfortable here.

While fungus foraging brings lucrative seasonal income, Nyima villagers have largely maintained their traditional agropastoral livelihood. In contrast to Nyima, in other areas Tibetans have abandoned their traditional herding and depend solely on their caterpillar fungus income.¹⁷ In Nyima, cordyceps foraging integrates with other household activities. For Tenzin, a typical foraging day begins and ends with setting up the fire and feeding her pigs heated turnip soup. Tenzin's father-in-law is usually in charge of the yak's summer pasture and does not participate in cordyceps foraging. For Nyima foragers, maintaining regular household production is just as crucial as cordyceps foraging. Some would even shorten their foraging in order to sustain other work, such as milking dzos in the afternoon.

Most of the households in Nyima keep a relatively large number of yaks and dzos. Yaks and dzos are not only used for subsistence but also as resources for production and sale. Yak meat and dairy products, such as butter and sour cheese from Nyima, are well known for their high quality and are very much sought after in local markets. Besides, local government policy encourages Nyima villagers to keep yaks, for example, by providing compensation for their loss due to accidents at half the market price. It is reasonable to suggest that government policy is an important factor in determining Tibetans' livelihood options, as is evident in Qinghai, where the government encourages herders to abandon their traditional nomadic livelihood and move to urban areas.¹⁸

In Qinghai, traditional land users lease their mountains to businessmen, who send workers to do the actual work of foraging cordyceps, often with little regard for sustainability and local ecologies.¹⁹ In contrast, in Nyima and other northwest Yunnan villages, only local villagers are allowed to collect cordyceps. The villagers regulate cordyceps foraging collectively, maintaining relatively strong control over their land. Stewart reports that the current form of cordyceps governance in northwest Yunnan is shaped by historical pasture tenure arrangements and is continually negotiated through contemporary

17 Yeh and Lama 2013, 327.

18 *Ibid.*, 326.

19 Tan 2018, 152.

political and economic development.²⁰ This confirms the point made by Chinese anthropologist Fan Changfeng that policy and land rights matter greatly in the political ecology of cordyceps.²¹

Responding to cordyceps's increased market value, Nyima villagers integrate cordyceps foraging into their summer agropastoral livelihood, which brings them additional cash income. At the time of research, Tenzin and other talented or lucky foragers could only find two to three pieces a day while others, including Liang, often finished a day of foraging empty-handed. Cordyceps populations in Nyima have been decreasing at daunting speeds in the last few years.

The Decline of Cordyceps Populations

During foraging, Tenzin and other foragers pointed at some mountains and told Liang they used to have abundant cordyceps in the past but nowadays it has disappeared completely. In the last five years, foragers in Nyima have witnessed a drastic decline of cordyceps populations on their mountains. When asked about the changes in cordyceps production throughout the last several decades, many foragers complained that finding cordyceps is becoming more challenging. Older generations have many intriguing stories about their past cordyceps foraging practices. One elder woman told Liang: "In the past, an experienced person could just sit on the grass and point out several cordyceps around him." Another forager claimed: "One person could find one kilogram of caterpillar fungus a day." An older forager even asserted that before the 1950s, "one person could find one thousand pieces a day." In contrast, in 2018, even experienced foragers could find an average of 200 pieces during the entire two-month foraging season, valued at around \$1,000 at the local market. In this area, finding three pieces of cordyceps is considered a "good day."

The declining cordyceps populations are documented across the cordyceps production area.²² In Nyima, not only have cordyceps entirely disappeared in some areas, but the number of foragers has also decreased in the last few years. According to foragers, Nyima mountains used to be most crowded during the cordyceps foraging seasons of 2012 and 2013, where more than one hundred villagers participated in daily cordyceps picking. During that time, every household sent as many members as possible to look for cordyceps. The situation changed in 2014 and 2015, as the decline of cordyceps started to become

20 Stewart 2015, 175–98.

21 Fan 2015, 37–47.

22 Negi, Koranga, and Ghinga 2006, 165–72; Shrestha and Bawa 2013, 514–12; Winkler 2017, 45–61; Hopping, Chignell, and Lambin 2018, 1–6.

visible. The difficulties of finding cordyceps resulted in some people leaving foraging or participating only at the very beginning of the collection season when cordyceps are most abundant. A recent quantitative study suggests that the decline of the cordyceps population is a combined result of overharvesting and global climate change, as the fungi grow close to permafrost.²³

On the one hand, the transformation since the turn of the twenty-first century of cordyceps from a marginal Tibetan medicine to a high-end gift commodity has been providing Tibetan foragers with an alternative livelihood including cash income as well as a sense of autonomy and fun embedded in their self-determined foraging. On the other hand, cordyceps foragers are increasingly facing the challenge of declining populations. As the starting point of the cordyceps commodity chain, the uncertain sustainability of current foraging practices could have serious consequences for this specialized livelihood, the cordyceps species itself, and the entire cordyceps economy. In the next section we show that as cordyceps continue their journey as a commodity, they enable a different type of livelihood in towns – the cordyceps trade.

A Case Study of a Hui Trader's Cordyceps Business

The lucrative cordyceps business has, since the 1980s, prompted an alternative urban livelihood that focuses on brokering and trading them. Traders from the cordyceps production area buy fresh cordyceps from foragers on the “cordyceps mountains.” Sometimes traders clean and dry the harvest on the mountains or transport fresh fungi still covered with soil to Shangri-La city. There, they sell cordyceps either directly to visitors or to professional cordyceps brokers and traders. During May and June, hundreds of outsiders flock to Tibet's provincial towns to buy the medicinal fungus in designated marketplaces. In Shangri-La the cordyceps marketplace is located at Mandala Square, a place built recently as a tourist attraction. Brokerage in this business covers various roles and designates diverse couriers, traders, and brokers. In Shangri-La, everyone who is between foragers and consumers is considered a broker or “cordyceps boss” (*chongcao laoban* 虫草老板). They are distinguished into “big bosses” (*da laoban* 大老板) – mostly traders and distributors in the market town, and “small bosses” (*xiao laoban* 小老板), operating between the mountains and the market place. They also differ according to capital invested. Small bosses can become big bosses over time.

For a long time, cordyceps traders in Tibetan towns have been predominantly Hui Muslim. Hui Muslims have been dominating the borderland between

23 Hopping, Chignell, and Lambin 2018, 1–6.

Tibet and east China since the end of the nineteenth century.²⁴ However, scholars show that the Chamdo cordyceps market has changed from a Hui Muslim-dominated place to a multiethnic market. With ethnic Tibetans and Han Chinese entering the business, Hui traders are no longer irreplaceable.²⁵

The cordyceps business offers social mobility and attracts individuals and groups from socially marginal positions. Ethnic minorities, such as Hui Muslims, as well as individuals with broken biographies and other disadvantaged groups, have few livelihood options in Chinese society due to their lack of formal education. The opportunity for social mobility and increased income leads many of these people to join the cordyceps business. Emilia Sulek has observed that the cordyceps trade is especially attractive to people who seek a new start in life or who are displaced from their previous environment, such as former monks, as no formal knowledge is required to become a trader, only capital, courage, and social contacts.²⁶ During Liang's fieldwork, she helped a Hui Muslim we call Bai, a cordyceps wholesale store owner in his midthirties, to clean soil from cordyceps. Bai has been her friend since 2012 and was once her cordyceps business partner, selling her some cordyceps after her first stay in Shangri-La, which she then sold in Shanghai.²⁷

Bai's "Highland Specialty Store" sells cordyceps and other herbs. The contrast between the dusty shelf displaying petty local herbs and the shining glass counter of cordyceps shows clearly which is more important in this shop. Bai recalled how his fortunes rose and fell along with his cordyceps business. When Bai was twelve years old, his father received a life sentence in prison for drug trafficking. To support his mother and younger brother, he started to participate in the herb trade at the age of fourteen, together with his uncle. Due to the meager profits of trading conventional herbal plants, Bai turned to the cordyceps business after seven years. He had a rough start with cordyceps, as he and his brother lost ¥200,000 (\$30,800) during the 2008 global financial crisis. During this crisis, the price of cordyceps dropped from ¥20,000 to ¥4,000. Bai expressed the depression his brother had felt when the crisis hit the business, saying that he lost the "will to walk" in those dark days.

24 The Hui's long and proud trade history can be traced back to the first Muslim merchant who came to China along the Silk Road in the seventh century (Moevus 1995, 115).

25 Min and Min 2010, 123–27.

26 Sulek 2019, 103.

27 Out of curiosity, Liang bought dried cordyceps from Shangri-La and sold to customers in eastern China via social media and an online shop in 2013. On one occasion, a bag of cordyceps worth \$12,000 was stolen from Liang in Shangri-La. Fortunately it was found again with the help of the police, but she stopped engaging in the business after this incident.

After losing money and becoming trapped in debt, Bai's wife started a small Hui cuisine restaurant. With the steady income provided by the restaurant, they slowly recovered from the 2008 crisis. In December 2012 Bai borrowed ¥4,000 to start a cordyceps business again. ¥4000 is a very small initial investment for a cordyceps business and he could initially only afford to trade small cordyceps that were either broken or shriveled (collected at the late stages of the fungus's life cycle). These types of cordyceps are the least valuable and are considered inferior in the market. Bai told Liang that people called him a "rubbish cordyceps boss" (*laji cao laoban* 垃圾草老板). But in 2014 and 2015, with growing trade experience, he earned over ¥1,000,000 (\$154,000) from the cordyceps trade. Today, he is considered one of the big bosses in the cordyceps business in Shangri-La. A full-time cordyceps trader's business entails great benefits and great risks, dictated by industrial centers in China and around the globe. The cordyceps business provided Bai with upward social mobility, which would otherwise have been very difficult for people like him to achieve, with a broken biography and a lack of formal education.

We have shown that cordyceps as a gift commodity has benefited the foragers and people who help transport cordyceps along the commodity chain. At the societal level, the cordyceps economy has created an alternative urban livelihood. At the individual level, it has provided economic opportunities to people at China's periphery, including those from disadvantaged social backgrounds. In the following sections we will show that cordyceps traders are the bridge between the high mountains and metropolitan cities and also actively add new meanings to cordyceps as a commodity. Fresh cordyceps are emerging in the cordyceps marketplace, which signals a transformation of cordyceps from gift commodity (back) to medicine, resulting from China's intensified anticorruption campaign, the development of e-commerce, and the advancing biomedical knowledge around cordyceps.

Recent Changes and the Rise of Fresh Cordyceps: From Gift Back to Medicine

Bai's wife is packing fresh cordyceps. She uses chopsticks to put fresh cordyceps, one by one, into a small transparent plastic bag. Each plastic bag contains ten fresh cordyceps fungi at most. She does it carefully so that the bags can then be sealed thoroughly by the vacuum-packing machine. In summer 2018 Bai and other traders were selling large quantities of fresh cordyceps. It is an unprecedented phenomenon in the cordyceps business. Throughout history, cordyceps has always been consumed and traded dried because fresh

cordyceps cleaned from soil can only be preserved for three to five days, while dried cordyceps can easily be stored for a year or more. Bai revealed that the fresh cordyceps is a tactic to cope with the current anticorruption campaign's tightening laws. In the following section we explain how the transformation of cordyceps from gift to medicine compensates for the loss of clients from the government sector by targeting a new range of customers.

Cordyceps and the Chinese Anticorruption Campaign

As emphasized by many scholars, cordyceps's exorbitant price had to be understood within the Chinese practice of gift exchange, in which cordyceps used to be gifted as a culinary and medical status symbol.²⁸ Although medicinal properties have always been part of the valuation of cordyceps, arguably they have been eclipsed by the status and power associated with the fungus as a gift for the powerful.²⁹ The Chinese practice of gift giving permeates all kinds of social relationships: in families, in important interpersonal relationships, or in dealing with political authorities, social institutions, and businesspeople.³⁰ Known as "connection" (*guanxi* 关系), gift exchange promotes reciprocity in social relations but also encourages bribery and corruption among government officials and businessmen.³¹ In Yunnan's Deqin County, a government official stated that in 2007 nearly a quarter of the local cordyceps was purchased to be used as gifts to local or visiting government officials.³² Anthropologist Yaqian Liang points out that as a medicinal substance, cordyceps was situated in the gray area between bribery and gift giving, making it safer and more tactful to present to officials than straightforward cash or gold.³³ Cordyceps also caters to the healthcare fashion among Chinese bureaucrats and businessmen, the so-called health bribing (*yangsheng xinghui* 养生行贿), in which they value cordyceps as a remedy for their excessive consumption of alcohol, cigarettes, and high-protein food.³⁴ However, its close association with bribery backfired on the cordyceps business when the anticorruption campaign came into effect after 2012. Cordyceps traders felt the effect of the anticorruption campaign through the sales of cordyceps, since due to the anticorruption law, officials stopped buying it. Bai joked about the intensity of the campaign, saying: "Now you can't even get a bowl of rice noodles [from public funds]." A cordyceps

28 Winkler 2009, 294; Liang 2011, 1–17; Yeh and Lama 2013, 318–40; Tan 2018, 143–66.

29 Yeh and Lama 2013, 331.

30 Steidlmeier 1999, 121–32.

31 Quah 2015, 72.

32 Stewart 2014, 18.

33 Liang 2011, 11.

34 *Ibid.*, 12.

trader from Litang complained about the anticorruption law: “Not like it used to be, now it is not allowed to [use public funds to] give gifts and not allowed to [use public funds to] eat.” The Litang trader was referring to two of the “Six Injunctions” (Liuxiang jinlin 六项禁令) in Chairman Xi Jinping’s anticorruption campaign, which have a direct impact on cordyceps sales: (1) “Officials are prohibited from giving complimentary local products to their superiors” and (2) “Officials are prohibited from using public funds to pay for visits, gifts, receptions, and banquets.”³⁵

After Xi came to power in November 2012, he launched an anticorruption campaign to crack down on “tigers and flies” – high-ranking officials and lowly bureaucrats who had become rich through bribery and patronage.³⁶ Anticorruption is nothing new in recent Chinese history. Since Chinese economic reform began in 1978, greater autonomy and capacity were given to government officials to develop regional projects and economic policies, but it also resulted in the aggressive growth of corruption.³⁷ Even though former Chinese presidents also recognized the problem of corruption and made many attempts to fight it, their measures led to little success.³⁸ Xi’s campaign does not just target corruption but aims to transform the political culture.³⁹ His anticorruption campaign’s effects manifest in China’s economic growth and changes in corrupt officials’ behavior.⁴⁰ As a result of the decline in sales of luxury goods and status symbols, China’s economic growth reduced by between 0.6 and 1.5 percent.⁴¹ Chinese corporate corruption spending also decreased significantly as a result of Xi’s campaign.⁴² Following the increasing intensity of anticorruption measures, a growing persecution paranoia among officials and cutbacks in department spending were reported all over China.⁴³ Extravagances, banquets, junkets, and gift giving, once standard practices, have now become taboo.⁴⁴

Cordyceps is now known for its association with crackdowns on corruption. Zhong Shijian, a former deputy secretary of the Guangdong Provincial Discipline Inspection Commission, was found with more than 200 kg of

35 Quah 2015, 46–47.

36 Schiavenza 2013.

37 Keliher and Wu 2016, 6.

38 *Ibid.*, 8.

39 *Ibid.*, 6.

40 Quah 2015, 58.

41 *Ibid.*

42 Ren and Patten 2019, 124–36; Zhang 2018, 375–96.

43 Keliher and Wu 2016, 9.

44 *Ibid.*

cordyceps in his home.⁴⁵ In 2017 a former party leader was sentenced to five years in prison for accepting in total ¥3.5 million (\$520,000) in bribes. In his testimony he said he spent much of the money on cordyceps for treating his high blood pressure and diabetes caused by excessive drinking.⁴⁶ On March 18, 2019, Chinese anticorruption authorities (specifically, the Central Commission for Discipline Inspection, or CCDI) launched a three-month campaign in Qinghai Province to crack down on the use of cordyceps for bribing officials.⁴⁷ The campaign explicitly targets officials who use public funds to purchase cordyceps as well as those who receive and give cordyceps to promote their business and personal interests.

Cordyceps is not the only gift commodity affected by the anticorruption campaign. The sale of other popular luxury goods is also declining for the same reason, as luxury watches and fine wine became indicators of corruption as well. One research article points to the “Swiss watch cycle” phenomenon, in which the rise in luxury watch imports is closely related to corruption in political transitions in China in 1996–97, 2001–2, and 2006–7.⁴⁸ Interestingly, this Swiss watch cycle did not manifest during the leadership transition of 2011–12, as wearing a luxury watch was likely to be exposed online by users of social media and draw attention from an anticorruption investigation.⁴⁹ Within the fine wine industries, people are providing alternative marketing strategies for coping with the decline of fine wine for gift giving.⁵⁰

When asked about his opinion on how the anticorruption campaign has impacted motivations for buying cordyceps among his customers, Bai, the Hui trader at Shangri-La city, replied: “We don’t have to speak in terms of percentage anymore; these days all the customers are buying cordyceps to eat it themselves.” Cordyceps as a “hard currency” for bribery was once in a gray zone because of its medicinal properties, whereas it is now under the spotlight of the anticorruption law. Its use as a high-end gift no longer facilitates the sale of cordyceps. Under such circumstances, cordyceps traders increasingly began to rely on demand for cordyceps from a new consumer class, health-conscious urbanites, and a new narrative: biomedical claims to efficacy. In the next

45 Zheng 2019.

46 Ibid.

47 See CCDI website announcing its campaign to investigate government officials who use “precious local special resources” for personal gain. It specifically mentions cordyceps and Kunlun Jade: http://www.ccdi.gov.cn/yaowen/201903/t20190314_190510.html, accessed 15 July 2019.

48 Lan and Li 2018, 1–19.

49 Ibid.

50 Seidemann, Atwal, and Heine 2017, 47–61.

section we turn to how cordyceps traders began promoting fresh cordyceps and how this new commodity attracted new players in the trade.

E-Commerce and Airfreight Facilitate Fresh Cordyceps Trade

Prior to its ban, traders in Tibet and metropolitan China had perfected the art of displaying dried cordyceps in lush gift box arrangements. “It looks small and expensive” were the words of a trader in Shangri-La, who commented on the specific fetishization of dried cordyceps. Fresh cordyceps, however, has new affordances: “[It] is better in color and size,” the same trader continued, “of course people like it.” The trader, who is in his twenties, was referring to the fact that fresh caterpillar fungi are four to five times the volume of dried specimens and have a fleshy appearance that clearly resembles a caterpillar. However, his main argument was psychological:

Fresh cordyceps makes people who are not so rich think they can also afford cordyceps. A big piece of fresh cordyceps only costs several tens of yuan. In the past, it was unthinkable for common people to consume cordyceps.

The trader described how the fresh cordyceps attracts price-conscious people. Due to its moisture content, fresh cordyceps is more voluminous and three times as heavy as dry. Hence, at first glance, fresh cordyceps is more cost-effective than dry cordyceps. In recent years, claims for the superior quality of fresh cordyceps also appeared in online advertisements during its short season. An advertisement (Figure 4) on the e-commerce platform Taobao provided a comparison of fresh and dry cordyceps. The ad was titled “Naqu [place in Tibet] origin: Not only high in altitude but also quality.” It claimed that, while the price for both dry and fresh cordyceps was the same, fresh “worm grass” (cordyceps) is three times heavier, longer, is fuller (*bao man* 饱满), a neutral odor (compared to the “fishy” [*xingwei* 腥味] smell of dried cordyceps), and has “300% nutrition” (*yingyang* 营养) compared to the “100% nutrition” of dried cordyceps. The advertisement concludes with a mathematical formula: “dry grass $\times 3 = 1$ piece fresh grass,” which means that for one piece of fresh cordyceps, consumers get the value of three pieces of dry cordyceps. The statement that fresh cordyceps is three times more nutritious than dry cordyceps was also widely repeated by traders of fresh cordyceps in Tibet. Sellers now emphasize the fungus’s medicinal properties rather than its value as a gift.

The emergence of fresh cordyceps has depended on new e-commerce platforms and faster trade routes. The highly perishable fresh cordyceps has around ten days to travel more than 2500 km between the high mountains

那曲原产
高的不仅仅是海拔 更是品质

干虫草	VS	新鲜虫草
31.8元	价格	31.8元
≈0.2g	重量	≈0.6g
≈4.5cm	长度	≈4.8cm
100%	营养	300%
中等	饱满度	高
深黄	颜色	浅黄
有腥味	气味	基本无味

干草*3 = 1根鲜草

注：仅供参考 具体以实物为准

FIGURE 4
Online advertisement for fresh cordyceps
SOURCE: [HTTPS://DETAIL.TMALL.COM/ITEM.HTM?SPM=A230R.1.14.30.2EED6824SXUESG&ID=618839280683&NS=1&ABBUCKET=16](https://detail.tmall.com/item.htm?spm=A230R.1.14.30.2EED6824SXUESG&ID=618839280683&NS=1&ABBUCKET=16), ACCESSED AUGUST 31, 2020

on the Tibetan Plateau and cities in east China. Without Shangri-La airport, it would not be possible. After cordyceps is dug out of the earth, it is usually covered by a thin layer of dirt and mycelial velum. With this layer, fresh cordyceps can be preserved for ten days at most. Once the fresh cordyceps is cleaned, it can only be preserved for two to three days in low temperatures. Traders, therefore, clean fresh cordyceps right before shipment (Figure 5). They pack it in vacuum-sealed plastic bags with ice packs and ship it via a newly established air express service, devoted to transporting fresh products, including matsutake, from Shangri-La airport to metropolitan cities where the consumers are. Taking off from Shangri-La airport, fresh cordyceps are guaranteed to be delivered to consumers in China's first-tier cities within forty-eight hours.⁵¹ In

51 In China first-tier cities represent the most developed areas of the country with the most affluent and sophisticated consumers.



FIGURE 5 Transporting fresh cordyceps. Left: cordyceps as dug up by foragers. Middle: cordyceps covered with soil on its way to the market town. Right: cleaned and vacuum-sealed cordyceps, ready for air express shipment

PHOTOS: S. LIANG, 2018

2018 almost every herbal store in the cordyceps marketplace owned a vacuum-packaging machine and charged street traders for packaging fees. Bai, the Hui trader, told Liang that the demand for the vacuum-sealed package was so high that three vacuum-packaging machines had been worn out in just a few weeks. A nearby kiosk invested in an extra fridge dedicated to selling ice to the traders.

E-commerce also plays an indispensable role in facilitating the trade in fresh cordyceps. Traders in the Tibetan Plateau and consumers in metropolitan China communicate and make payments in real time, making the fast-paced fresh cordyceps business possible. Since around 2010, e-commerce platforms such as Taobao, or social media-based e-commerce on WeChat and TikTok, have disseminated widely throughout China. This trend has accelerated and reached Tibet with the proliferation of smartphone use.⁵² The internet plays a crucial role in bridging rural traders and urban consumers. While Taobao is a complex platform, mostly used by established sellers and herbal pharmacies, local sellers prefer social media-based e-commerce. WeChat (Weixin 微信), the Chinese messaging giant, for example, allows traders to communicate via the app, access their network of contacts, and advertise with images on “Moments,” the social media function of the app.⁵³ Traders can use the same app to send and receive money in real time. Illiterate traders use voice messages and videos to conduct business.

52 Wang, Lau, and Gong 2016.

53 WeChat (<https://weixin.qq.com/>) is a Chinese multipurpose messaging, social media, and payment application for mobile phones. Daily active users of WeChat, predominantly Chinese communities across the world, exceed 1 billion people.

Selling fresh cordyceps is less risky than selling dry cordyceps and the financial barriers for participating in the trade are also lower. In order to sell dry cordyceps, traders have to purchase cordyceps during the foraging season and sell it gradually throughout the year, which entails risks, as the price of cordyceps fluctuates. In contrast, fresh cordyceps is a seasonal (two-month-long) business that comes with quick money in a short period. Selling fresh cordyceps does not require capital or stock, attracting people previously prevented from participating in the business. Or, as a local elderly resident put it: "These days, whoever has a mobile phone can sell cordyceps." Seasonal sellers of fresh cordyceps have a broad range of daytime professions; they are farmers, hotel workers, taxi drivers, schoolteachers, and other residents of small towns. In addition to the locals, people from neighboring cities also come to the Shangri-La cordyceps market during foraging season. In 2018 a new category of participant in the trade emerged, the so-called WeChat merchant (*weishang* 微商): fashionably clothed, young urban women who came to Shangri-La whenever they had received an order via social media. They stuck out among the male traders at Bai's herbal shop, usually bought fresh cordyceps, had it packed in-store, and sent it out by air express on the same day. Fresh cordyceps, initially promoted by experienced traders in response to anticorruption constraints, has attracted more participants who wish to earn quick money. The new commodity, made possible by Shangri-La's logistic chain, has created new livelihoods based on e-commerce. These livelihoods depend not only on novel infrastructures but also on a broadening consumer base in China and the recoding of cordyceps as medicine and nutraceutical rather than as status symbol and gift. In the next section we turn to the biomedicalization of cordyceps.

Biotechnology and the Rediscovery of Medicinal Value

The commodity chain of wild cordyceps from Tibet to urban China unfolds parallel to efforts to biomedicalize cordyceps as a global nutraceutical supplement. Here we use "biomedicalization" to denote technoscientific interventions in and appropriations of a "traditional" medicine/tonic for a global market. Medical anthropologists have addressed different aspects of the intersections between Tibetan medicine and biomedical science. As noted above, as a dried gift, cordyceps was a valued tonic because of its association with male power and sexuality. Cordyceps's biomedicalization has broadened the spectrum of its beneficial applications and dissociated it from notions of power, bribery, and masculinity. Novel understandings of cordyceps build on a molecular understanding of the fungus's pharmaceutical properties in terms of active ingredients for specific uses. Biomedical research on cordyceps, mostly conducted in China since the 1980s, has focused on the immunomodulating, anti-oxidant,

and antitumoral properties of the fungal metabolites, such as polysaccharides. In this same period research into the domestication of cordyceps has begun. While it is still extremely difficult to reproduce the multispecies life cycle of host and parasite, research has focused on vegetative reproduction. Biotechnological companies have developed methods to produce “cordyceps” through the fermentation of its mycelium in a liquid substrate, thus divorcing it of the multispecies life of the wild fungus–caterpillar assemblage.

As a commodity, fermented cordyceps plays a marginal role in the Chinese market. This may be partly attributed to the value placed on “wild” foods and medicines and the image of Tibet as a place of purity. Another reason may be that increased knowledge about biomedical technologies paradoxically increase uncertainty about cordyceps. Cordyceps turns out to be “multiple” in more senses than just assembling fungus and insect. The fungal part of the caterpillar fungus itself is a little understood multiplicity. *Ophiocordyceps sinensis* is a fungus with an unusually large number of “anamorphs.” Anamorphs are isolates of fungal mycelium of the same species that reproduce vegetatively, as opposed to sexual reproduction through fruits and spores. Anamorphs, despite being the same species, are given separate taxonomic names, in the case of *O. sinensis*, for example, *Hirustella sinensis*. Due to their ability to reproduce vegetatively, anamorphs can be cultivated in a bioreactor and have been the foundation of biotechnological production. However, to complicate matters more, not all isolates of *O. sinensis* seem to be true anamorphs of the same species, but some might be entirely different species.⁵⁴ Despite these taxonomical and technological difficulties, “domesticated” cordyceps is today one among several fungi marketed in Western countries and China as medicinal fungus. Practitioners of alternative medicine in the West prescribe biomedicalized cordyceps (we might call it global cordyceps) as a dose-dependent remedy for fatigue, mild depression, and sexual dysfunction. A market analysis firm has estimated the future value of nutraceutical cordyceps at more than \$1 billion by 2026.⁵⁵

The impact of “global cordyceps” indirectly impacted the “wild cordyceps” complex. Chinese customers largely continue to have a strong preference for wild medicines and distrust the fermented alternatives. Most Tibetan traders and brokers had never even heard of their biotechnological competition. We suggest that what had an impact was the new medicalized language and imagery that resulted from decades of biomedical cordyceps research. Biomedical images and understandings began to appear, for example, in online advertisements of the product. In an online ad placed on the Taobao website by a medicinal herb company (Figure 6), a wild cordyceps stalk, still muddy with soil, is

54 Holliday et al. 2004, 152; Chioza and Ohga 2014, 1.

55 Coherent Market Insights 2019.



FIGURE 6
 Online advertisement for cordyceps
 SOURCE: [HTTPS://DETAIL.TMALL.COM/ITEM.HTM?SPM=A230R.1.14.28.33307C2FIYXRFU&ID=5497.24367159&NS=1&ABBUCKET=11](https://detail.tmall.com/item.htm?spm=A230R.1.14.28.33307C2FIYXRFU&ID=5497.24367159&NS=1&ABBUCKET=11),
 ACCESSED SEPTEMBER 3, 2020
 (LOGIN REQUIRED)

held up by two fingers clad in a lab glove, behind a photoshopped image of the Forbidden City in Beijing, the historical seat of imperial power. The image is surrounded by circles that list the biomedical properties of “Winter worm, summer grass.” From the top left clockwise: “Amino acids (eighteen kinds), cordyceps polysaccharides (about 28 percent), micronutrients, cordyceps polypeptides, superoxide dismutase, proteins (about 25 percent), vitamins, acid (about 7 percent).” Cordyceps’s properties have, however, not translated into a demand for the “nutraceutical forms” of cordyceps. Cultivated cordyceps in the form of pills and extracts has not made an impact on Chinese consumers “who demand the whole wild larvae–fungus complex.”⁵⁶ As Yeh and Lama point out, cordyceps resists biomedicalization in China due to the “significance of nature and the nonhuman” for this particular medical commodity.⁵⁷ In contrast to global cordyceps, the Chinese cordyceps cannot be separated from the geography of its commodity chain and the material semiotics of the

56 Yeh and Lama 2013, 321.

57 Ibid.

multispecies origins of the caterpillar fungus. However, the language of biomedicine and the new legitimacy of cordyceps's efficacy have contributed to the marketing strategies of the fresh cordyceps trade.

Conclusion

As we have shown, cordyceps foraging is an important seasonal livelihood on the high mountains in Shangri-La. Tibetan foragers in northwest Yunnan continue to earn a living from cordyceps foraging, despite the effect of the anti-corruption campaign on gifting. As fresh cordyceps are highly dependent on infrastructure and technology, the uneven development of those two factors will pose different challenges to different cordyceps "production" areas across the Tibetan Plateau. Cordyceps production areas without airports, cold chains, or internet access are unlikely to participate in the seasonal fresh cordyceps trade. Moreover, while traditional and elderly traders have benefited from technology that enabled them to find a broader consumer base, they are also facing the side effects – more competitors and less profit, especially the encroachment of giant e-commerce pharmacies.

Fresh cordyceps indicates new uses of cordyceps in urban China. It is no longer a high-value gift with a long shelf life that would frequently change hands and move up in the Chinese government sector's hierarchies. These uses have been effectively curbed by the anticorruption campaign described in our paper and have dried up that consumer base for cordyceps traders. These losses have been compensated by the invention and promotion of perishable cordyceps and its associated values of purity, technological modernity, and freshness. From the perishable nature of that new seasonal trade follows that cordyceps is now increasingly consumed rather than passed on as a gift. This consumption is arguably connected to novel understandings about the efficacy of the parasitic fungus for various ailments. This new knowledge, we have argued, is paradoxically related to the largely failed attempt to domesticate the multispecies assemblage of caterpillar, soil, and fungus. While cordyceps produced with novel technologies of mycelial fermentation has not contributed significantly to the Chinese markets, it has lent scientific authority to the practices of eating cordyceps. Unlike other high-value tonics in China, such as rhino horns and tiger penises, cordyceps has survived medical scrutiny and is now widely recognized as beneficial to the lungs, immune system, and as an energy booster. Biomedical language has entered the advertising of fresh cordyceps along with familiar marketing strategies for fresh foods promoted as closer to nature and healthier. We suggest that the fresh cordyceps trade,

whose consumers are more interested in its medicinal properties, highlights the transformation that cordyceps is undergoing from gift back to medicine.

We have shown that cordyceps transformed back and forth between medicine and gift. Cordyceps's value is associated with the multiplicity of its medicinal properties across the spectrum of traditional, popular, and biomedical practices, as well as the Chinese practice of gift giving and its attached ideas of networking and power. (Re)medicalization has also saved dry cordyceps. While sales in conventional bribery items, such as Swiss watches, have declined, the revival of cordyceps as tonic has kept it in high demand.

The emergence of fresh cordyceps during foraging seasons was made possible by an alliance of foragers, traders' ingenuity, the spread of new technologies, and the development of new infrastructures. Cordyceps traders play a role in this process by inventing a makeshift "cold chain" from the camps of the foragers to the market town and onward to consumers in the cities. They have adopted new technologies, like vacuum-packaging machines and e-commerce platforms, and contributed to the marketing of cordyceps as a tonic for immediate consumption. Freshness also depends on the availability of ice packs in Shangri-La and fridges in urban China. The cordyceps trade has long provided an opportunity for upward social mobility to individuals. This trend has accelerated with fresh cordyceps, which attracts new players and fortune seekers.

Returning to Friedberg's point that freshness means different things in different foods and in different societies, what is the meaning of freshness in cordyceps? In this paper we have shown how freshness indicates fluidity in the dual significance of the parasitic fungus as gift and medicine. Cordyceps as a medicinal commodity has been traded for centuries in its dried form and has found its place in traditional Chinese medicine. Its medical meanings have arguably become secondary with the boom of cordyceps as "soft gold" and its integration into the Chinese culture of gift giving and bribery during the first two decades of China's economic boom. The first appearance of fresh cordyceps on the market of Shangri-La might thus signal the beginning of an entirely new meaning of the medicinal caterpillar fungus in Chinese society and have consequences for the livelihoods in Tibet that depend on it.

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