

Yartsa gunbu, Tibet's underground cash cow

On 14 February 2008, the government of Golog Tibetan Autonomous Prefecture (Chin: Goluo), Qinghai Province, publicly announced that from this year no outsiders would be allowed to enter the prefecture in order to collect yartsa gunbu (*Cordyceps sinensis*; caterpillar fungus). Although such a policy has supposedly been on the books since the late 1990s, it was not enforced in Golog to the dismay of local Tibetans, many of whom perceived the annual invasion of ten thousands of outside collectors to be poachers of their resources. The prefecture administration had, however, been collecting higher and higher fees from those outsiders, often a multiple of the official local annual income.

The announcement comes in advance of the yartsa gunbu season, which normally starts in May in eastern Tibet (currently administrated as Sichuan, Yunnan and Qinghai provinces), followed in central Tibet and the Himalayan areas (the Tibet Autonomous Region (TAR)) towards the end of the month. It is short and lasts in any given vicinity for about 40 days. During the collection season, nearly everybody that is able to roam the grasslands will be camping out in the mountains and combing the high altitude grasslands for yartsa gunbu.



The peculiar, finger-length fungus has a pencil-wide fruiting body that grows out of the head of ghost moth larvae. A healthy larva hibernates deep in the ground, while an infected larva buries itself close to the surface where the fungus can grow above ground to spread its spores. Collectors dig out the larva and the fungus. The condition of the larva is regarded as more important than the fruiting body. Tibetans commonly refer to this larva-fungus as 'bu', meaning worm. The full name yartsa gunbu means 'summer grass-winter worm'. Just finding one big or two to three smaller 'bu' secures as much income as one day of backbreaking roadwork. However, most collectors find many more a day, anything between 5 and 25 is common, but collectors also can find none or hundreds of specimens. Collectors can sell an individual specimen for 3 to 50 Yuan (UK&0.22-£3.60; US\$0.45-\$7; EUR€0.3-€5), average specimens trade for 8 to 12 Yuan (UK&0.56-

&0.82; US\$1.1-1.6; EUR€0.8-€1.2). The value chain links collectors on the slopes of Tibet's alpine grasslands with markets in county towns, prefectural centres, i.e. Nagchu (Naqu), Chamdo (Qamdo), Jyekundo (Yushu), Dartsedo (Kangding), and regional and provincial capitals (Lhasa, Xining, Chengdu) to mostly Chinese consumers in the People's Republic of China (PRC) and beyond.

In the West, M.J. Berkeley described yartsa gunbu in 1843 as *Sphaeria sinensis*. The 'sinensis' epithet was applied since Berkeley had obtained his specimen from a market in coastal China. Apparently he was not aware of its origins on the Tibetan Plateau. The gathering, trade and use of yartsa gunbu has a long history in Tibet. The first known references to *Cordyceps sinensis* under the name yartsa gunbu can be found in the 'Oral Instructions on a Myriad of Medicines' by Zurkhar Nyamnyi Dorje (1439-1475). Traditional Tibetan Medicine (TTM) regards yartsa gunbu as a "medicinal essence" (*rtsi sman*), like several other tonics. It is prescribed for strengthening the patient's health, including the immune system, and for boosting virility, and for treating ailments of the kidneys, lungs and heart. Traditionally it is also applied for treating Hepatitis B. A key characteristic of yartsa gunbu in TTM is that it is regarded as very effective, without causing side effects.

In recent years yartsa gunbu has become nearly as central to Tibetan rural life as the yak, the 'cornerstone species' of traditional Tibetan subsistence economy. Yartsa gunbu enables access to the cash economy of the 21st century for rural Tibetans or marginalised urban populations. The market is driven by demand from Chinese consumers in China, Hong Kong, Taiwan and Singapore, where yartsa gunbu is known as *dongchong xicao*, a translation of the original Tibetan name, or in shortened form as *chong cao*, literally 'worm grass'. In Traditional Chinese Medicine (TCM), where the oldest known records of *Cordyceps sinensis* are dated to the late 17th century, *dongchong xicao* is prescribed for similar health issues in the same way as it is used in TTM. The use as a lung remedy in TCM allowed for a doubling of its value during the SARS crisis in 2003. Yartsa gunbu also has turned into a fashionable luxury product, an exquisite culinary status symbol to be found in high-end restaurants or served at ostentatious dinner parties. Also, prevalent Chinese thinking and marketing suggests that the consumer of *Cordyceps* is also, in some way, absorbing the 'purity' and 'mystique' of Tibet.

Already by the early 18th century in China, the monetary value of yartsa gunbu was equal to the same weight in silver. However, the value plummeted during the tumultuous years after the PRC take over of Tibetan regions in the 1950s. In the 1960s and 70s trade on the plateau was monopolized by the state sector. Rural Tibetans had to fulfil imposed collection quotas and trade outside of the official channels was very risky. These circumstances, it seems, curbed the demand and the market for yartsa gunbu became very unstable. With economic liberalisation in the 1980s, however, prices picked up and collection became attractive again for rural communities.

From 1997 to 2006 prices have increased by 500%; an average of over 20% per year for collectors and middlemen. Currently 1 kg of dried Yartsa Gunbu bought in Lhasa costs from 20,000 to 80,000 Yuan (UK£1,427 to £5,711; US\$2,800 to \$11,200; EUR€2,000 to €8,000) depending on its quality. In 2007, the very best quality had a retail price in coastal Chinese cities of more than 240,000 Yuan per kg (UK£16,300; US\$32,000; EUR€24,000), making it more expensive than gold. In 1999, through to 2004, production of yartsa gunbu was reported at 35-50 tonnes annually in the TAR; overall annual production on the Tibetan Plateau is estimated at 100-200 tonnes. According to ecologist Daniel Winkler's [website about Cordyceps sinensis in Tibet](#), collection and sales generated 40% of the rural cash income in TAR. In prime production areas, the income contribution reaches 70-90% of a household's cash income. Thus, yartsa gunbu has developed into the single most important source of cash for rural households in contemporary Tibet. In 2004, yartsa gunbu contributed at least 1.8 billion Yuan (UK£114.7 million; US\$225m; EUR€153.2m) to TAR's GDP, representing 42% of the primary sector (agriculture, livestock and forestry) and exceeding the total of the secondary sector (industry and mining) by nearly 20%, when correlated to figures in the official Tibet Statistical Yearbook. In short, rural Tibet is currently largely dependent on income from this fungus. It is remarkable, that the cash infusion via the yartsa gunbu trade in the last ten years seems to have accomplished what 50 years of top-down Beijing-prescribed development schemes hardly achieved, the integration of rural Tibetans into Mainland China's economy. The cash income from the yartsa gunbu trade has acted as a catalyst for rural economic development, and this has been expressed in a general commodification of rural Tibet. The economic integration is well symbolised by herders exchanging their horses for motorcycles.

Due to its ever-increasing value, more and more Tibetans comb the vast high altitude grasslands in search for the tiny fungus in spring and early summer. According to county officials, Chamdo prefecture's Dengchen county, TAR, (Chin: Dingqing) mobilized 60% of its inhabitants to collect yartsa gunbu, since it was the single most important source of money in the county. Each year, more counties are making similarly organised efforts due to the recognition of its steadily increasing economic significance. Most counties in the TAR, Sichuan, Yunnan and Qinghai require collection permits and charge fees, and while the permit fees for local residents are in the range of 40 to 400 Yuan (UK£2.50-£25; US\$5-54, EUR€4-40), fees for non-residents in southern Qinghai reach 4,000 Yuan (UK£275; US\$540, EUR€400), nearly twice the annual per capita



Yartsa gunbu capsules as

income in rural TAR. These fees are charged to migrant collectors, who number, according to a Qinghai government investigation, in the hundreds of thousands and are mostly Chinese Muslim (Hui) and Chinese (Han), but also Tibetans from other prefectures. Disputes between residents fighting over access to collection areas or between residents and migrant collectors, who are often regarded as poachers, continue to result in violent clashes, with some each year turning deadly. For example, in 2006 in Zatoe County (Pinyin: Zado, Jyekundo / Yushu prefecture, Qinghai province), residents were incensed that prefectural officials had sold expensive collection permits, guaranteeing access to their grasslands, to several thousand migrant collectors without sharing profits with the residents who hold the usage rights for these pastures.

sold by a Taiwanese
company

Sustainability of collection is of great concern. Some experts and government agencies worry about the sustainability of present harvesting and favour regulation beyond current collection fees and licenses. In the PRC, *Cordyceps sinensis* is a Class 2 protected species, which translates in reality to the simple requirement of special licenses for export. The first TAR-wide regulations on collection and protection of Yartsa Gunbu were published in Chinese in April 2006. These regulations stipulate that county administrations keep records of production and map out production areas. Furthermore, it proposes the formulation of a management plan, the standardisation of the county-issued collection licenses and emphasises the responsibility of administrations to “maintain harmony” during collection season; a clear reference to annually occurring violent clashes when collectors fight over resource access. This regulation was followed in December 2006 by a TAR conference addressing these issues and providing a framework for implementation. It is still too early to judge if these initiatives will bear fruit.

Overall, the current pressure on natural populations of *Cordyceps sinensis* has clearly reduced the harvesting rate for individual collectors, an issue remarked upon by many collectors. So far, yartsa gunbu is still distributed in areas where it has been collected for centuries. Whether the reduced individual harvest rate reported by collectors translates into an overall natural output reduction is not clear, since so many more people are collecting. Furthermore, the reliability of the government statistics has not been verified by independent research. Recently, a Financial Times special quoted Yang Derong, a *Cordyceps* expert, who was reported as having observed a crash in natural production. However, reliable baseline data regarding annual production and field studies regarding the impact of collection pressure are not available. The annually increasing harvest pressure and the absence of reliable monitoring clearly necessitates government-funded research to formulate sound management strategies to secure the long-term productivity of *Cordyceps sinensis*. A crash of the yartsa gunbu production, or a fall in its value through replacement by farm-raised artificially infected larvae, a practice that has so far met with limited success, would have a devastating impact on marginalised rural Tibetan communities.

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