

LING ZHI

The history of classic medicine in pre-modern China is extremely rich and complex. It is intimately associated with long-standing beliefs and hygienic practices¹ of both the elite and commoners, some founded on quasi-religious or mystical ideas and superstitions, and a focus on surviving famines and envisioning living in perpetuity as an etherealized god-like spirit.

Controlling one's fate, reputation and legacy required following procedures designed to prolong one's life and attain one's natural life-span of a hundred years with continued physical and emotional vigor. The highest goal was to become immortal. Many methods were developed over the centuries to achieve these ambitions. During the Han Dynastic period, classical medical theory entailed sociopolitical ideals that would become manifest in a world united by compliance to rituals honoring Heaven, Earth and Man, moderation in all activities, and respectful obedience to the ruler, the ancestors, the family elders and particularly the laws of nature, as demonstrated in the revolution of the stars around the earth and the progression of the seasons.² Deviations from the norm, whether from an emperor's or a commoner's misbehavior, resulted in illness. Restoration to order and health required compliance to the laws of nature and the adoption of dietary practices as recommended by the sagely physician. If unheeded, illness would ultimately transform into a more virulent disease from which one would die before reaching one's predetermined life-span of one hundred years. (Most Chinese men, it was said, die by age 50. Most Chinese women died by 49).³ On the other hand, adherence to nature's laws coupled with a special luminous magic potion taken by righteous adepts would enable one to possibly live longer than 100, perhaps even forever either as a dematerialized human or a physicalized spirit.

Although there are no historical records in existence of a Chinese emperor managing to actually attain a life of either a hundred years - or - immortality, several went to extraordinary lengths to procure and create magical substances that promised to protract and even perpetuate their lives forever. Immortality drugs were consumed in preparation for ascending to the celestial firmament as a winged immortal. An ultimate and 'ideal' goal of emperors, theoretically at least, was to rule at the center of an orderly celestial government centered at the pole star. It would be managed by loyal, righteous and ethical spirit-bureaucrats and protected by strong defending celestial armies. All that was required was that while living, the ruler perform the prescribed annual rituals and govern in accordance with the Tao and Confucian principles.⁴

Emperors, like many of the rest of us, were concerned, especially toward the end of their lives with

prolonging their existence forever. Legendary tales of miraculous elixirs suggested this was a goal that could be attained. The emperors were too worldly, too immoderate, too acquisitive, too connected to the here and now. They all failed to become spirits and were poisoned instead, presumably because they were unworthy. In fact, of the 66% who were not murdered or who died by suicide, 82 out of 88 emperors who died early in life had a history of overindulgence in drinking or/and sex, or between 31.4 and 38.6 years of age depending on the mode of extravagance. This contrasts with the mere six out of 240 emperors who managed to live an average of 81 years (range: 69-89).⁵ Given the esteem in which fungiphiles especially hold on 'medicinal fungi' longevity drugs like *Ganoderma ling zhi*, you may be thinking these immortality substances consisted mainly of fungi and certain herbs. Surprise! No, they did not. They involved ingestion of long-lasting substances culled from mountains. They were more durable than anything 'organic' or 'natural' – even one as hard as a lacquered polypore. *For at least the first 1200 or more years of Chinese imperial history these immortality drugs involved ingestion of metals that were believed to have been alchemically transformed, minerals and precious stones, and not Ganoderma ling zhi.*

The Chinese term *ling zhi* 靈芝 was first recorded during the Han dynasty (206 BC – 9 AD). What it referred to, however, is open to question. The individual and combined characters that comprise the name of the fungus currently known as *ling zhi* have numerous layered meanings and despite its later association with a species of *Ganoderma* from the fifteenth century onward, no one can be certain that the words refer to the polypore in its earliest documented references.⁶ In fact, there is no description or drawing of a polypore or any other substance that would confirm its potential medicinal use for anything prior to fifteenth-century. Given the absence of evidence, I would suggest the term simply refers to a substance that was believed to confer immortality.

Immortality elixirs were pursued particularly by ascetic Taoists, typically men who studied with a noted adept, and who spent their lives alone on the outskirts of society. Their numbers grew in times of war, famine and other catastrophes and sometimes they were associated with political rebellions. Some sought to make the most of circumstances that threatened survival. They found refuge in uninhabited mountainous regions south of the Yangtze River. There they searched for foods and medicines consisting of its unfamiliar plants, animals, insects, minerals, metals and fungi to sustain themselves. With no access to grains or rice, they ate no starches, fish or pungently favored foods, and fasted for days at a time. They practiced purification rites, and sought to lengthen their lives or better yet, become spiritual

beings by creating elixirs of immortality. Some elixirs were said to be so potent that lost teeth would regrow, and white hair would become black again. They aimed to become so light that they would dematerialize.⁷ Immortals could also walk on water, ice or snow, become invisible at will, change form and travel the heavens and earth without being hampered. These powers were known through ancient stories to have been achieved by the mythical adepts who lived in the depths of legendary time. Some Taoists also practiced breathing exercises, gymnastic calisthenics, and sexual techniques involving retention of semen (primal-quintessential life). Others engaged in ritualized alchemical practices involving the alleged manufacture of potable gold out of cinnabar, mercury, realgar (disulphide of arsenic), salts, orpiment and Sulphur in crucibles kept going over fires for months at a time. They ate so little that they occasionally wrote about seeing ghosts and gods. The metallic compounds and particularly arsenic breathed in while cooking their preparations may have been accompanied by hallucinations. Drinking the elixir over time probably also prevented their bodies from decomposing as they would if they died naturally.⁸

I should mention here that the impression one gets from reading Chinese literature of all kinds is that nearly everything could be considered a medicine or a food. Everything had meaning and purpose in sustaining life through the myriad challenges of surviving through periods of war, famine and disease as well as economically and politically stable times. It is revealing to note that a commonly used greeting 你吃了吗? (Nǐ chī le ma) means “Have you eaten?” When people are hungry, they are often feeling weak and in physical distress. They will search for whatever is available to eat and that included poisonous roadside weeds, herbs, insects, hair, human waste products and parts of animals we typically reject. In such circumstances, the body will respond to whatever nourishment is given. It is interesting that the Taoists ascetics often commented on substances that would help one feel full or enable one to survive for days without food. In fact, there were numerous works written throughout the past 2,500 years on dietetics. The titles tell us a lot: “Recipes for Rapid Aid against Starvation”, “Simple Recipes without Grains for Rescue from Starvation”, and “The Book of Survival in the Wilderness and during Famine.”⁹ The aspiration of living forever seen in this context is understandable even to western minds.

By the ninth and tenth century, many Taoist alchemists started to look for antidotes to elixir poisoning resulting from consuming toxic metals, while others abandoned the attempt to attain physical and/or immaterial immortality and focused instead on internal ‘alchemy’ which consisted of comparatively healthy practices involving meditation and ‘mindful’ exercises. But there were some still taking

dangerous longevity drugs in the Sung Dynasty period (960-1279) and even up through the eighteenth century. Kuo Zongshi, who worked as a minor official as Drug Inspector for the Imperial Medical Service during the Sung, wrote *Dilatations on Materia Medica (Bencao yanyi)* in which he discussed the functions and traits of what he considered were the most important drugs. He criticized the continued practice of popular healers' promotion of longevity drugs:

"I do not know from which generation of the Daoist practice of longevity drugs began. [However,] the number of people this practice killed is legion. In spite of that, generations have admired and valued these practices. This is bewildering...[they] pray [hoping the patient] will not die but actually he dies quickly. They call this wisdom. How can that be?"¹⁰

His conservative - more Confucian - philosophy of medicine follows that expressed in earlier classical canonical literature in reminding physicians that they should not treat those already ill, but instead treat them with education on maintaining health before they are sick. "Dispensing drugs in a perfect way is not as good as maintaining health."¹¹

The (1444) Ming Dynasty edition of the Taoist Canon mentions 127 varieties of immortality mushrooms in the chapter entitled "Classifications of the Most High Divine Treasure Mushroom Plant". A Ming reprint from 1598 includes woodblock pictures of them. Most are herbs that are also employed in many commonly used prescriptions for a variety of diseases. Some of them could elicit hallucinations – including *Cannabis sativa*, *Datura stramonium*, *Phytolacca acinosa* (poke weed) and *Gymnopus junonius* (The latter may be a different species, but it was known as the 'laughing mushroom'). I find it interesting that the online copy of the book illustrates several cap and stem mushrooms - possibly hallucinogenic, as well as edible fungi still widely used in Chinese cooking (*Tremella fuciformis*, *Auricularia* sp., and *Polyporus umbellatus*). However, there is no representation of a strain of life-extending *Ganoderma*.¹²

Li Shizhen's *Ben cao Gang mu* ("Compendium of Materia Medica") from 1596 discusses six differently colored immortality excrescences (green, red, yellow, white, black, and purple) saying that other sources mention they were spoken of in the no longer extant Han medical classic, *Shen nong ben cao*. The term *Ling zhi* is not even listed, but he does describe the effects of *Chi zhi*, the "red mushroom."¹³ My best guess is that Li Shizhen mistakenly determined that this red fungus, first associated with the emperor in the Ming Dynasty, was the immortality substance mentioned in the 2,000-year-old classic. Being red in

color it was associated with the heart in medicine; cinnabar, the red ore that releases silvery blobs of toxic mercury upon heating; fire; the sun; summer; noon; heat; growth; expansive energy; circulation; the planet Mars; happiness; joy; laughter; long life; vitality; money; prosperity; good luck; the south; marriage; the bridal color; cherry blossoms; red carnations; peaches; a musical note; mythical flying birds; fertility; bitter taste and scorching odors among a plethora of similar correspondences.¹⁴ In the Sung Dynasty through the Ching Dynasty it was also associated with carved vermilion lacquered objects and jewelry made with the red pigment of cinnabar.

In the late sixteenth century *Bencao Gangmu*, Li Shizhen said it “affects the life-energy (*ch’i*) of the heart region, repairing and benefiting those with a knotted and tight chest. Taken over a long period of time, agility of the body will not cease, and the years are lengthened to those of the Immortals.”¹⁵ The term *zhi*, which has no equivalent in Western languages, refers to a variety of super mundane substances often described as immortality substances. Depending on the historical period in which it was used, the term denoted different substances made from minerals, precious stones, wood, lichens, fungi, insect, animal and even human parts. By the late sixteenth century, it referred mainly to a variety of edible fungi and lichens. The Chinese *Ganoderma* species was called *chi zhi* 赤芝 or “red mushroom”. All this leads me to be inclined to suggest that the term *Ling zhi* as used in first and second century texts did not refer to the polypore, but to a real or imaged life-sustaining substance, also referred to as *dan zhi*, the Cinnabar immortality substance or stone mushroom.¹⁶

In an effort to convince us of its medicinal efficacy, mention is frequently made of its symbolism as a feature of imperial art and architecture over thousands of years:

As a symbol of good health and long life, it is represented throughout ancient Chinese and Japanese art. It was woven into the silk robes and carved into the official scepter of Chinese emperors. At the Forbidden City of Beijing and at the Emperor’s Summer Palace, reishi is symbolized across the doors and door lintels, archways and railings. Reishi has been called the king of herbal medicines and was ranked in the Chinese Herbal Classic as the superior adaptogen, placed at the top of the list above ginseng.” Reishi is regarded by *Ganoderma lucidum* advocates as the most revered medicine in the Chinese materia medica.¹⁷

The decorative art referred in the preceding passage to was **not** a feature of any dynasty until the Ming Dynasty (1368-1644). It is significant that the initial appearance of *Ganoderma lucidum* images in art are associated with a renewed interest in immortality drugs around 1400 AD. The painting by Chen Hongshou (1598–1652) of a fully realized Taoist adept sitting on a cloud holding a *Ganoderma* in hand is among the most famous.¹⁸ However, among the less mystically inclined, the red polypore symbolized good fortune, wealth and long life. Its use as a prominent decorative element of imperial clothing, furniture and architecture was likewise not an important symbol in China until the Ming dynasty, following the move of the capitol city from Nanking to Beijing. From 1420 onward, the Ming capital was erected on the ruins of the former capital of the Yuan Dynasty under the Mongol ruler Kublai Kahn. Its discovery may have been about the same time, given that thousands of workers had been ordered to take down the evergreen forests in the southwest to build the capital from scratch. After this point, we first begin to see *Ganoderma ling-zhi* depicted on many imperial decorative objects. It is also found sewn into silks worn by the imperial family and carved into palace furniture and on the buildings of the Forbidden City. This, coincidentally, is also about the time we see first see the polypore represented in Japanese art. The art of six hundred years ago in China or Japan is not contemporary, but it also isn't exactly 'ancient' either.

In any case, in the fifteenth century the fungus was considered rare and only the emperor was permitted to possess it. It is revealing that Ming emperor, Jia-Jing, who ruled from 1521 to 1567, looking to prolong his life forever, did not take the so-called 'King of Herbs' or 'Immortality Drug', the *Ganoderma* mentioned in the Ming *Compendium of Materia Medica*. Rather, at the recommendation of his physician, he ate and drank from vessels made from alchemical gold and silver and like rulers before him suddenly died of poisoning.¹⁹ The last known emperor to have taken immortality drugs was Yong-cheng of the Ching Dynasty (1636-1912). He ruled from 1722 until his sudden death also from metallic-mineral elixir poisoning in 1735.²⁰

Basically, there is a lack of recorded evidence that *Ganoderma ling-zhi* was ever employed as a longevity or immortality substance prior to the late twentieth century. By then, the wealthy paid a fortune to procure *Ganoderma* from all parts of the world. The fact that it had previously been forbidden to commoners, made it especially valuable and a sign of one's exalted economic and socio-political station in life. Attempts to cultivate *Ling-zhi* to be used medicinally by the Chinese began in the late 1960's, but its first successful cultivation of in China was in 1992. Thereafter techniques of cultivating the polypore

were transmitted all across China and its use has rapidly spread throughout Asia and elsewhere. Thanks to the continued desire to ‘self-medicate’ with ancient supplements associated with happiness, wealth and longevity and to the proficient marketing techniques of Chinese pharmacists, nearly everyone today knows of its alleged energizing, health promoting, preventative and curative powers.²¹

Despite the frequently mentioned use of *Ganoderma lucidum* (*G. ling-zhi*) in ancient China to cure cancer²², there is absolutely no evidence to back up this assertion. No pharmaceutical prescription was ever created specifically for cancers! There was not even a *word* for cancer in the Chinese literature until the late twentieth century. Its absence doesn’t mean cancer didn’t exist. It just was not recognized as a distinct disease. In fact, none of our modern disease concepts match those described in pre-modern Chinese books on medicine, theory or drugs. But had there been a recognized disease condition representing life-threatening cancers or any other debilitating pathogenic process, *Ganoderma ling zhi* would definitely not have been the drug of choice prescribed to treat or cure it. As a so-called ‘superior’ drug, it would not even have been considered robust enough to fight the effects of a growth that made it difficult for the patient to breathe. A patient diagnosed with potentially terminal illnesses would have been prescribed a combination of militant – even toxic ingredients to fight his condition – or nothing at all.²³

The following passage, however, is the one usually referred to when authors and researchers mention the long use of *Ganoderma lucidum* in China.

*“Tiny excrescences. These grow deep in the mountains, at the base of large trees or beside springs. They may resemble buildings, palanquins and horses, dragon and tigers, human beings, or flying birds. They may be any of the five colors. **When** dried in the shade, powdered, and **taken by the inch-square spoonful, they produce spirithood.** Those of the intermediate class confer several thousands of years, and those of the lowest type a thousand years of life.”²⁴*

I suspect that the square-spoonful of dried mushrooms which conferred on the Taoist at least a thousand years of life, or even immortality definitely was not ground-up *Ganoderma*! It is more likely they were hallucinogenic mushrooms, such as *Gymnopilus junonius*, or even hallucinogenic plants, which some groups of Taoist alchemists are known to have used.²⁵ Joseph Needham mentions an illustrated Liang dynasty (502-587) publication called “On the Planting and Cultivation of Magic Mushrooms”, which

unfortunately is no longer extant.²⁶ Or it consisted of a hallucinogenic lichen or stones shaped like mushrooms. Zhang Heng (AD 78-139) was the first to mention *ling zhi* in a prose poem about the Islands of the Immortals called “Western Metropolis Rhapsody”.

Raising huge breakers, lifting waves,
That drenched the stone mushrooms on the high bank,
And soaked the magic fungus on vermeil boughs.²⁷

The point is, *Ling zhi*, the spirit-excrescence, or spirit seed of a sublime substance was highly regarded for its super-mundane mystical powers, and not for its ability to boost the immune system, to cure cancer or to act as “the superior adaptogen,”²⁸ The aura and mythology surrounding *Ling zhi* as an immortality substance has inspired Chinese researchers to find evidence for its ability to serve as a medicine. In any case, assertions that *Ganoderma ling-zhi* has a 7,000 to 2,2000+ years-long history of successful use is misleading and does little or nothing to buttress arguments regarding its medicinal efficacy. Saying this, does not, however, mean that it should be ignored by researchers looking to discover medicinal compounds that may prove useful in helping us live healthier and longer lives.

FOOTNOTES

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